STEREO CASSETTE RECEIVER

RX-28

SERVICE MANUAL

(M-28)

KENWOOD

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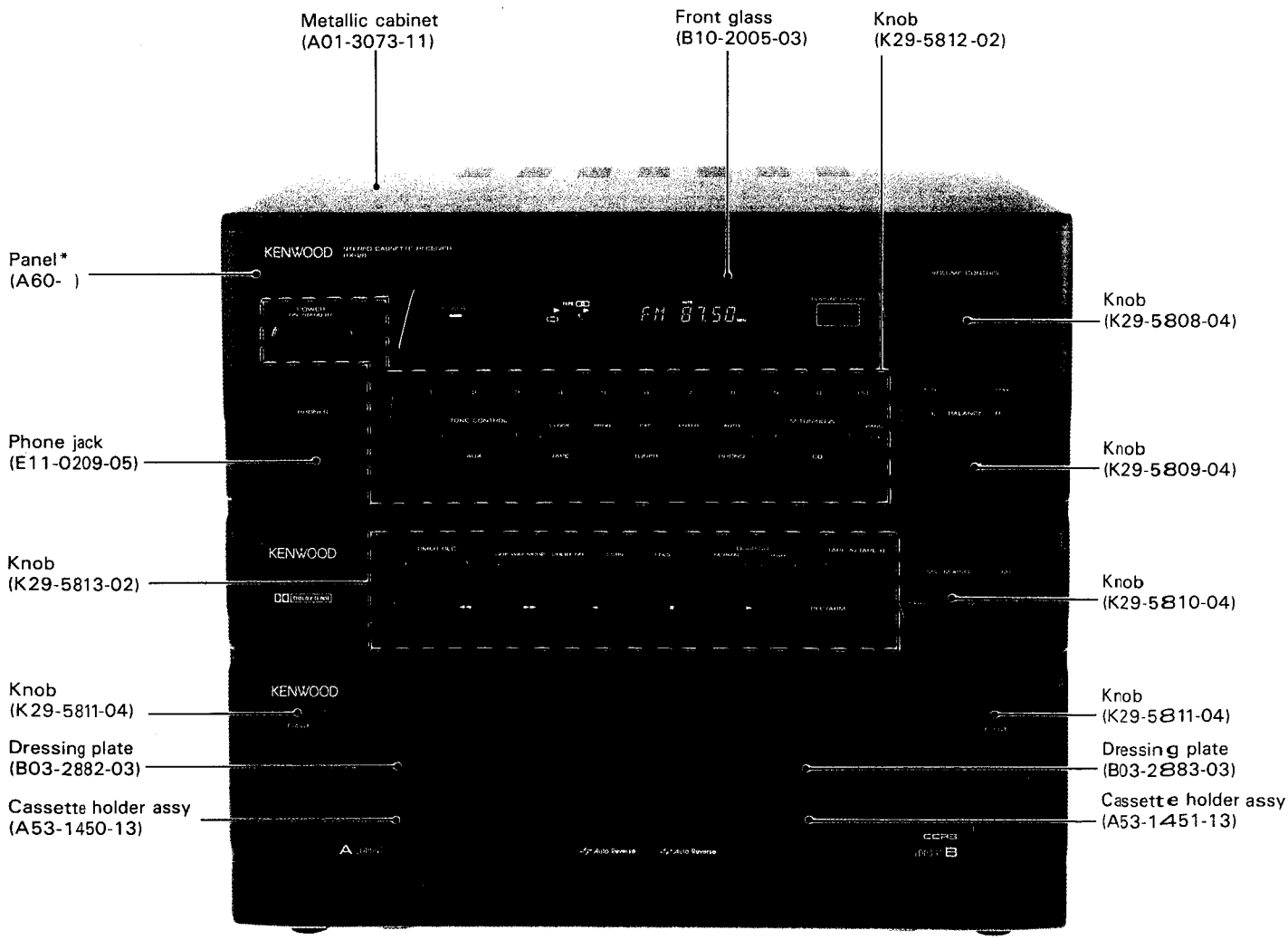
B51-4830-00(S)3914



*Refer to parts list on page 46.

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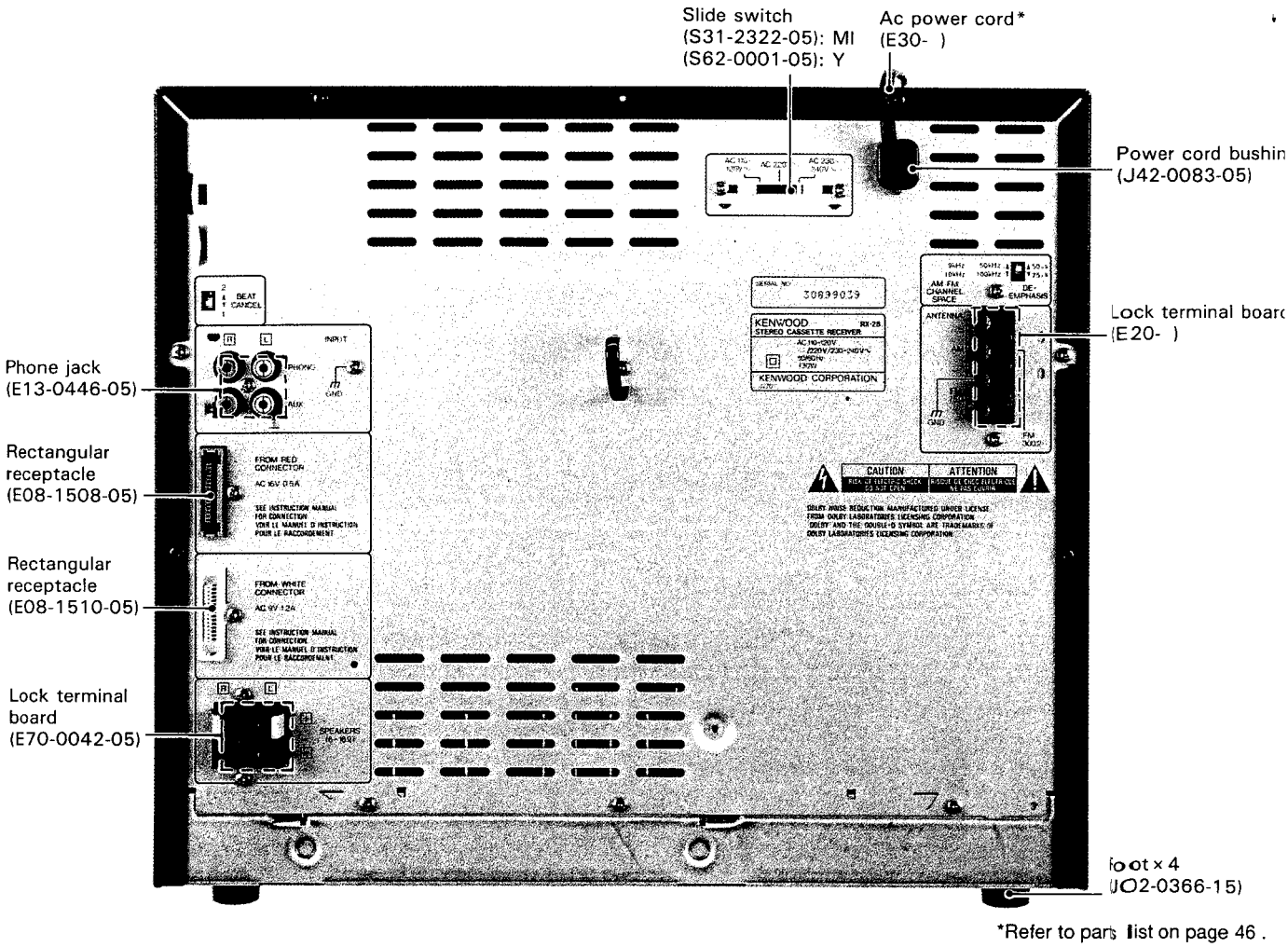
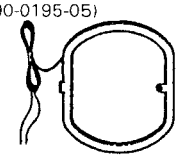


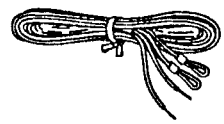
*Refer to parts list on page 46 .

Accessories

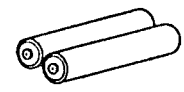
- AM (MW, LW) loop antenna 1
  (T90-0195-05)



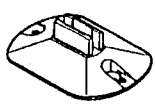
- FM indoor antenna 1
  (T90-0175-05)



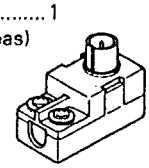
- Batteries (R6/AA) 2



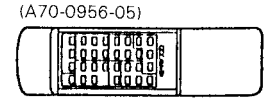
- Loop antenna stand 1
  (J19-3636-05)



- Antenna adaptor
  (75 Ω/300 Ω) 1
  (Except for same areas)
  (T90-0185-05)



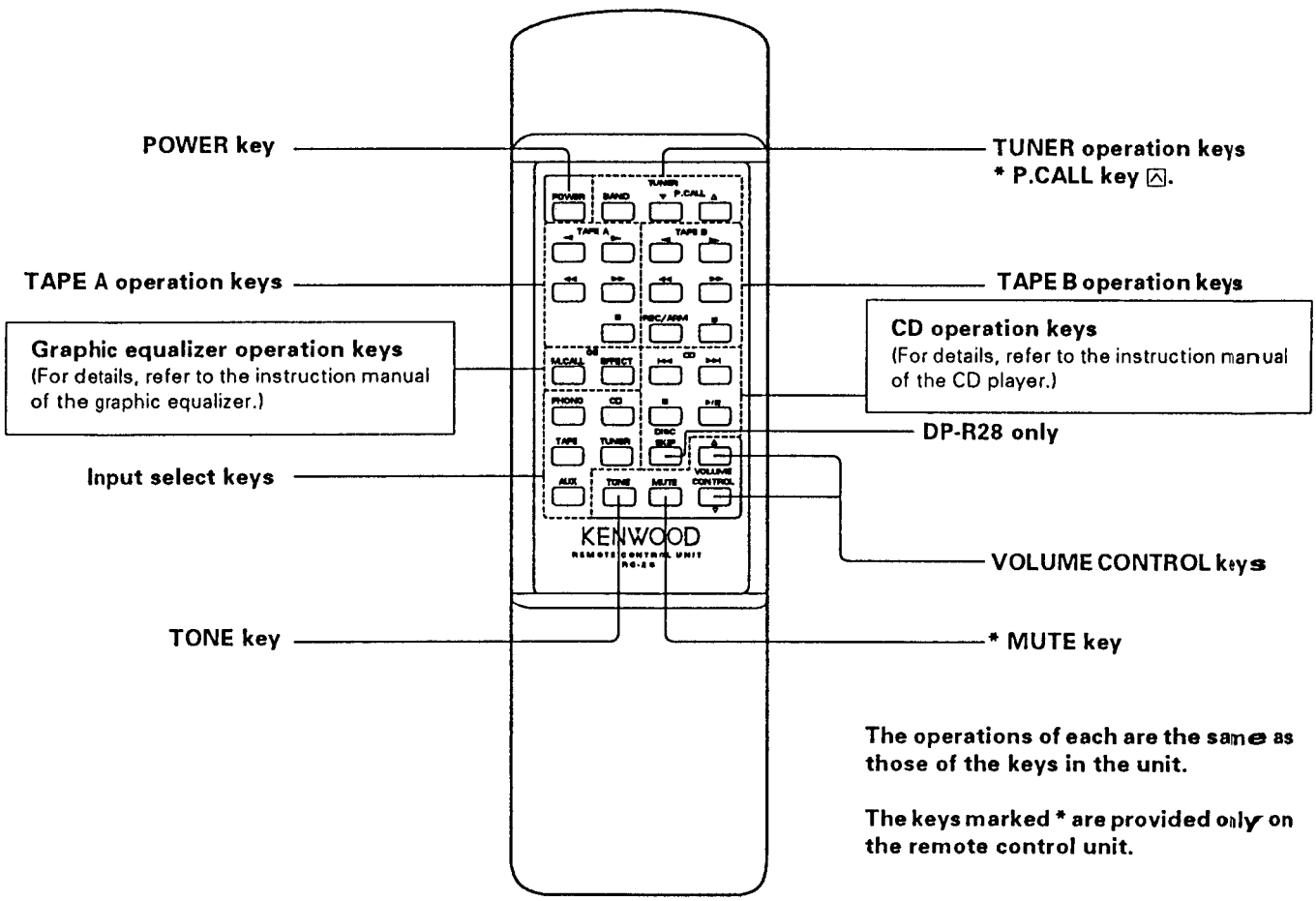
- Remote control unit .....
  (A70-0956-05)



(A09-0146-08): BATTERY COVER

REMOTE CONTROL OPERATION

REMOTE CONTROL UNIT : (A70-0956-05)
BATTERY COVER : (A09-0146-08)


POWER key
TUNER operation keys
* P.CALL key △.
TAPE A operation keys
TAPE B operation keys
Graphic equalizer operation keys
(For details, refer to the instruction manual of the graphic equalizer.)
CD operation keys
(For details, refer to the instruction manual of the CD player.)
DP-R28 only
Input select keys
VOLUME CONTROL keys
TONE key
* MUTE key
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The operations of each are the same as those of the keys in the unit.

The keys marked * are provided only on the remote control unit.

INSTRUCTION MANUAL

B60-1335-00	ENGLISH	
B60-1336-00	FRENCH	PE
B60-1337-00	CHINESE	MI
B60-1338-00	GER,DUT	E
B60-1416-00	SPANISH	EM
B60-1417-00	ITALIANO	E

DISASSEMBLY FOR REPAIR

1) How to remove the front panel.

1. Remove the volume control, balance control nut ,knob (❶).
2. Remove the two screws from the lower section and the four side screws (❷).
   Remove the side reinforcement hardware by inserting a slot-head (—) screwdriver between the hardware and the front panel molding to pop out the tabs on the hardware .
3. The M type microphone jack is remove by inserting a thin slot-head (—) screwdriver into the border (❸) to the right and left of the jack and removing the hook. Then, when the long hook (❹)from the front panel holding the microphone PCB in place is removed, the front panel can be removed.

2) How to remove the headphone PCB.

1. Insert a thin slot-head (—) screwdriver into the holes above and below the front panel to pop out the headphone molding tabs (❺) .

3) How to remove the power transistor PCB.

1. Remove the four screws from the lower section of the back panel (the M type has three screws).(❻).
2. Raise the back panel 10 millimeters and remove the two screws (❼) holding the radiator.
3. Remove one screw (❽) from the PC board holding the parrallel leads and use a screw to attach the right side of the radiator to the upper part of the rear panel.

4) How to remove the tuner PCB .

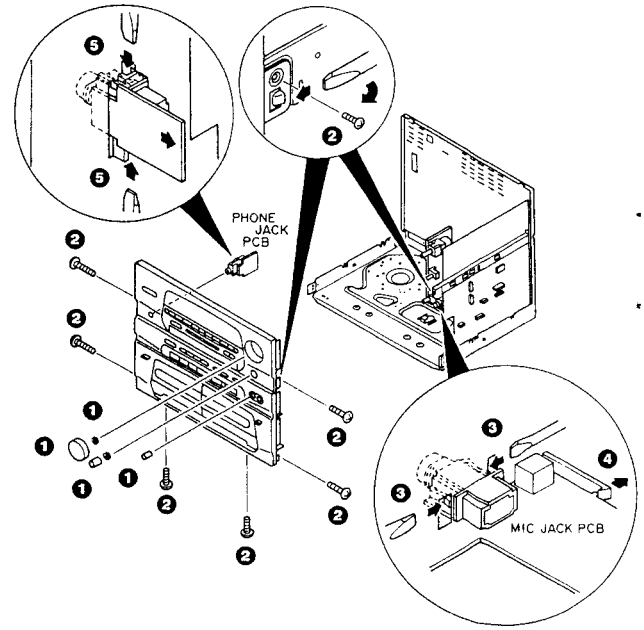
1. The tuner PCB can be removed by first removing the two screws (❾) from the rear panel side and then removing the four PCB holder hooks (❿) from the front side.

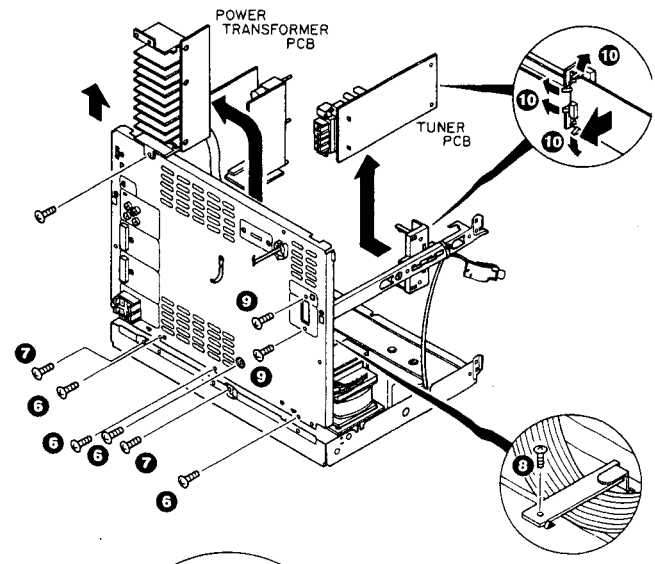
5) How to remove the reinforcing hardware from the PCB (X28)(A/5) .

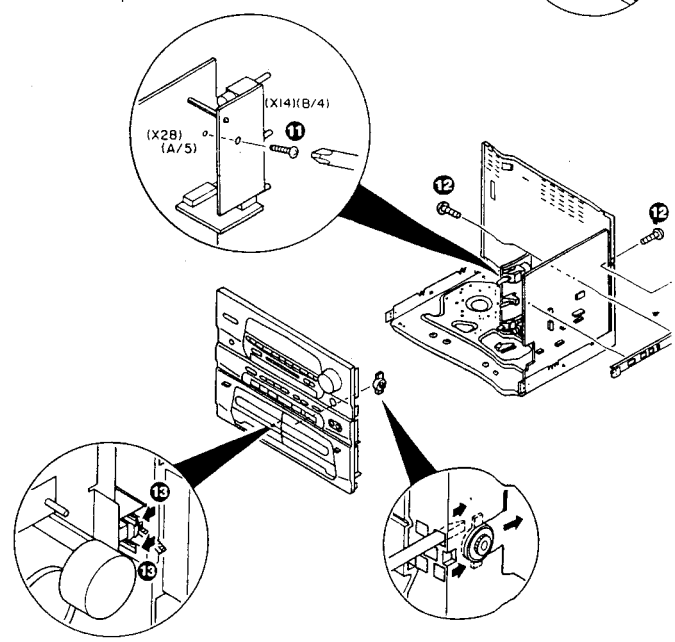
1. There is a round hole in the VOL. PCB(X14)(B/4) ; insert a (+) screwdriver into the hole to remove one screw (⓫) . Then remove the two screws (⓬) holding the hardware in place and remove the hardware.

6) How to remove the DECK's gear damper.

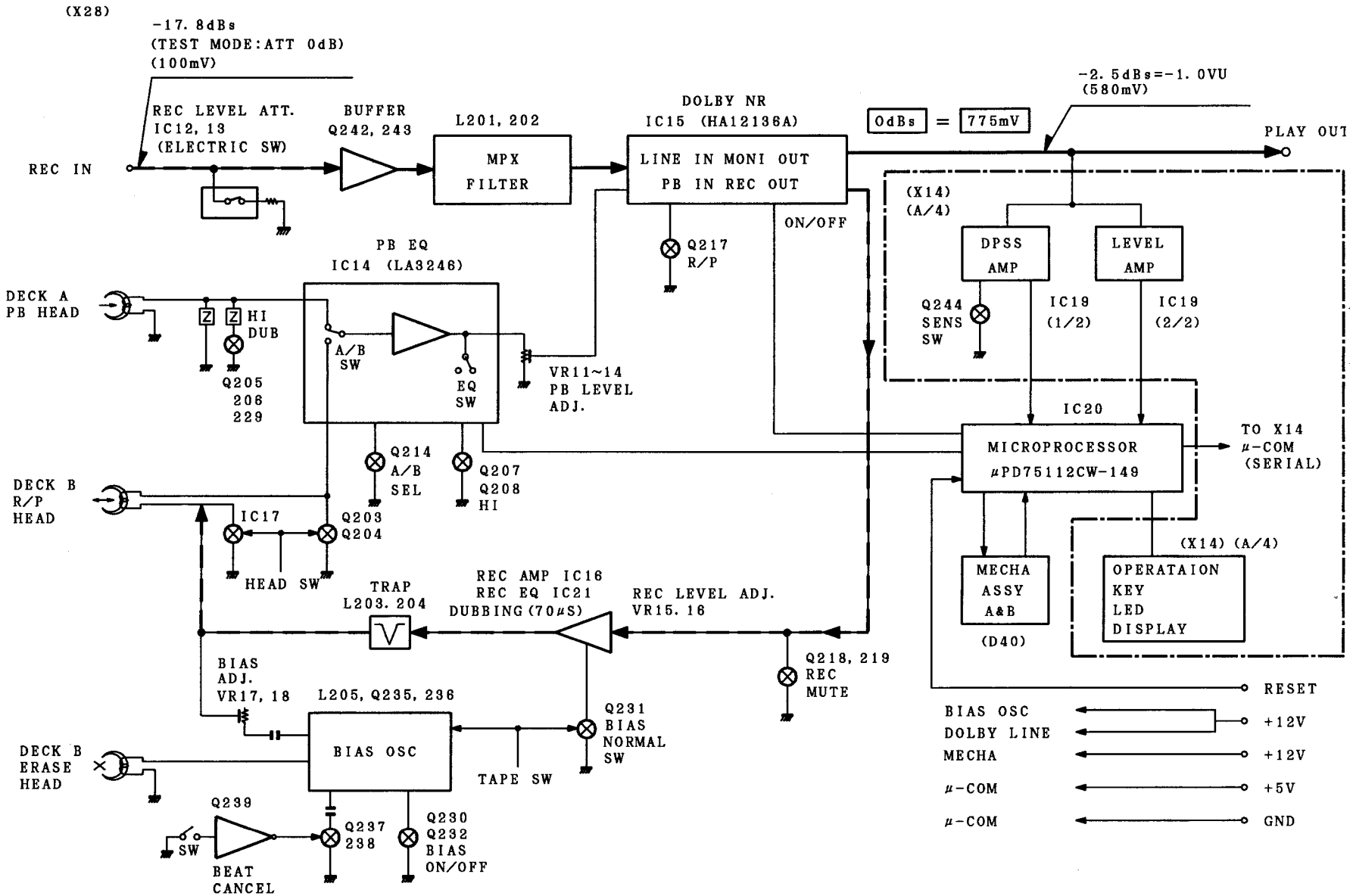
1. Press the two hooks (⓭) in the center of the DECK (holding the gear damper in place) in the arrow direction.
2. After opening the cassette holder, insert a thin slot-head(—) screwdriver through the front panel center hole to press and remove the gear damper.







BLOCK DIAGRAM



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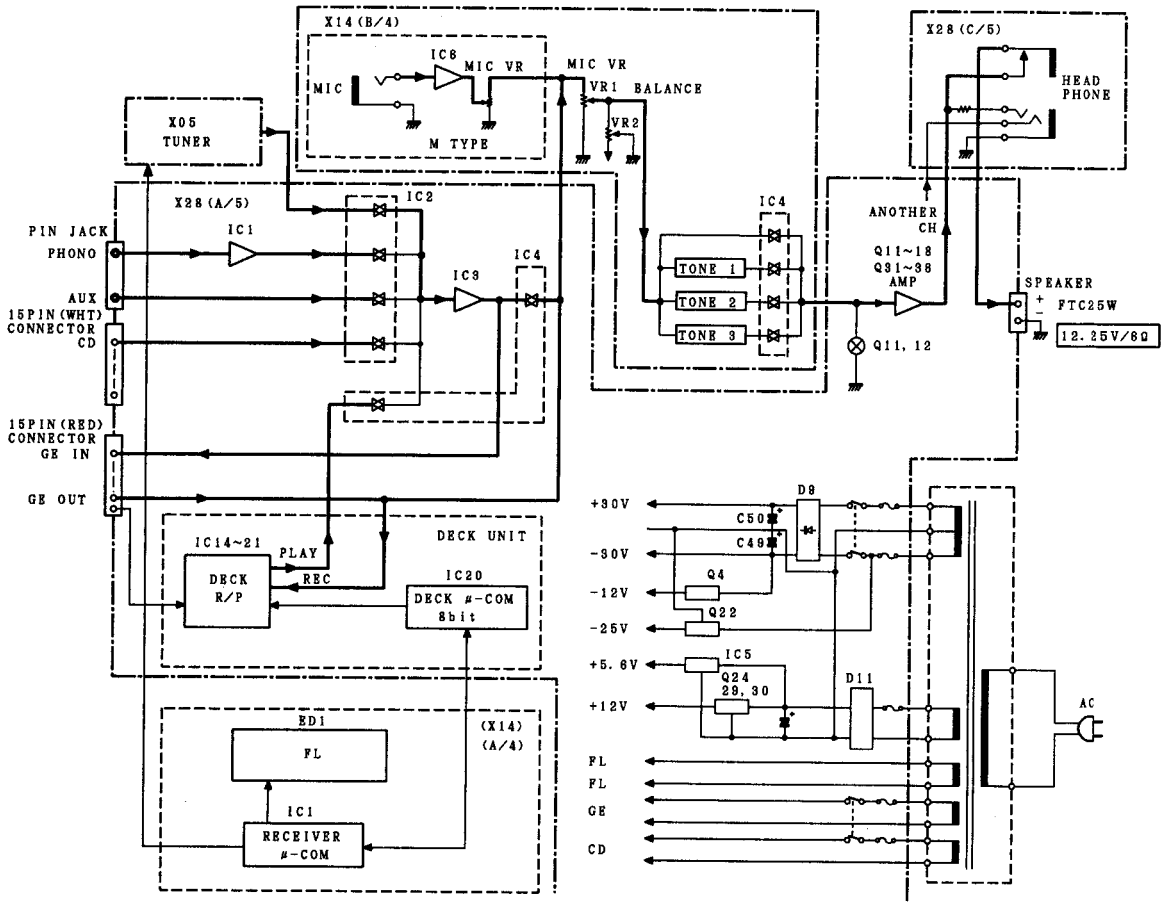
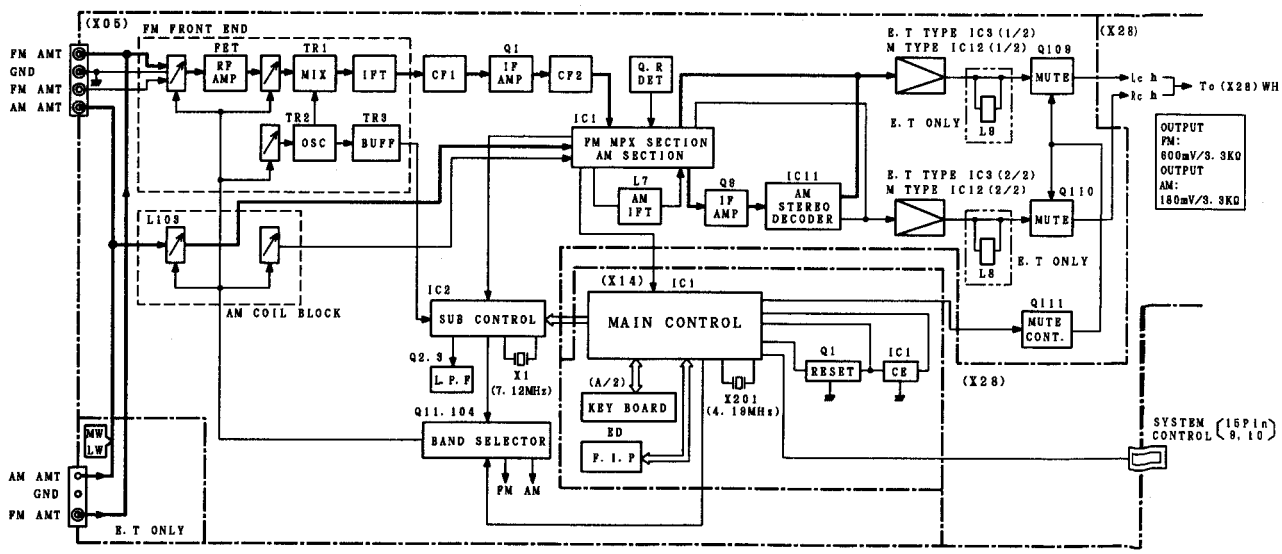
<AMP SECTION>

BLOCK DIAGRAM



<TUNER SECTION>



CIRCUIT DESCRIPTION

Receiver Microprocessor: CXP50112-544Q (X14-: IC1)

1. Description of functions

(1) Features

* 5 audio inputs
  CD, PHONO, TUNER, TAPE, AUX
* 30-station frequency preset memory
* One programmable timer

(2) Object of regulation

* FL display tube: 9-BT-129GK
* Deck regulation microprocessor: μPD75112GF-E40
* PLL (with IF count): LC7218

2. Conditions according to destination/model

(1) Frequency

SETTING SW (Port No. of IC1)			Destination	Band	Reception frequency range	Channel space	Reference frequency
CH. SPACE (38)	AM MODE (37)	LW MODE (36)					
0	1	*	K1	FM	87.5~108.0 MHz	100 KHz	25 KHz
				AM	530~1610 KHz	10 KHz	10 KHz
0	0	*	K2	FM	87.5~108.0 MHz	100 KHz	25 KHz
				AM	530~1700 KHz	10 KHz	10 KHz
1	*	0	E1	FM	87.5~108.0 MHz	50 KHz	25 KHz
				AM	531~1602 KHz	9 KHz	9 KHz
1	*	1	E2	FM	87.5~108.0 MHz	50 KHz	25 KHz
				AM	531~1602 KHz	9 KHz	9 KHz
				LW	153~279 KHz	9 KHz	9 KHz

0: Low 1: High *: Don't care

3. Initial conditions

POWER	OFF
Selector	TUNER
Mute	OFF
BAND	FM
Frequency	FM lower limit
AUTO/MONO	AUTO
PRESET CH frequency	See next section
Program execution mode	OFF

CIRCUIT DESCRIPTION

4. Preset frequency during resetting

Destination / CH	K1		K2		E1		E2	
	BAND	Frequency	BAND	Frequency	BAND	Frequency	BAND	Frequency
1	FM	87.50	FM	87.50	FM	87.50	FM	87.50
2	FM	98.00	FM	98.00	FM	98.00	FM	98.00
3	FM	108.00	FM	108.00	FM	108.00	FM	108.00
4	AM	630	AM	630	MW	630	AM	630
5	AM	990	AM	990	MW	990	AM	990
6	AM	1440	AM	1440	MW	1440	AM	1440
7	AM	530	AM	530	LW	162	AM	531
8	FM	90.00	FM	90.00	LW	270	FM	90.00
9	FM	106.00	FM	106.00	LW	216	FM	106.00
10	AM	1610	AM	1700	MW	1602	AM	1602
11	FM	87.50	FM	87.50	LW	153	FM	87.50
12	FM	87.50	FM	87.50	LW	279	FM	87.50
13	FM	90.00	FM	90.00	FM	90.00	FM	90.00
14	FM	106.00	FM	106.00	FM	106.00	FM	106.00
15	AM	530	AM	530	MW	531	AM	531
16	FM	87.50	FM	87.50	FM	87.50	FM	87.50
17	FM	87.50	FM	87.50	FM	87.50	FM	87.50
18	FM	87.50	FM	87.50	FM	87.50	FM	87.50
19	AM	990	AM	990	MW	990	AM	990
20	FM	89.10	FM	89.10	FM	89.10	FM	89.10

Frequency Unit FM: MHz
AM: kHz

5. Test mode

(1) Setting Method

All FL illuminate when the AC power cord is plugged in while depressing the CD key. While in this state, pressing any other key (besides the CD key) clears the all-illuminated mode and actuates the test mode.

(2) Description of actuation

Pressing the following keys clears the all-illuminated mode and tests the corresponding actuation.

- Tape

When this key is pressed, the electronic volume is raised for 16 seconds, lowered for 16 seconds, and then stops. During this time the TAPE key is prohibited.

- 0~9, +10

1 position / 10 position	1	2	3	4	5	6	7	8	9	0
0	1	2	3	4	5	6	7	8	9	10
1	11	12	13	14	15	16	17	18	19	20

The +10 key switches the 10 position cyclically, 0 and 1. As shown in the table, when the 10 position is 0, keys 0~9 call channels 1~10. When the 10 position is 1, keys 0~9 call channels 11~20.

- Other keys function normally.

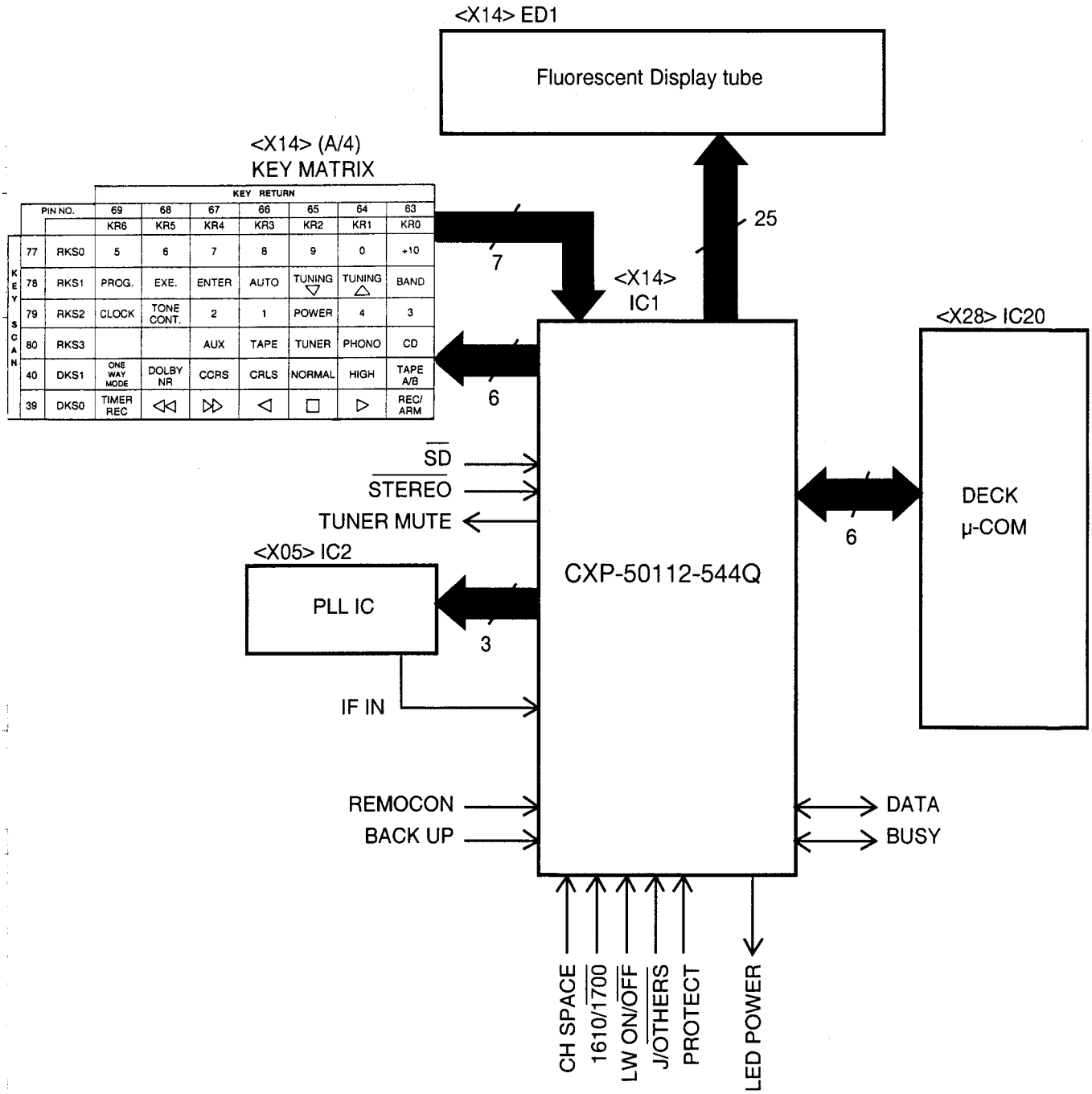
* If the power cord is pulled during test mode, the test mode is canceled and the initial values restored.

* If the power cord is plugged in with the TUNER key depressed, the initial values are restored.

* During the test mode, regardless of the tone status, if the back panel GE switch is ON, "TONE" illuminates, and if the switch is OFF, it does not illuminate.

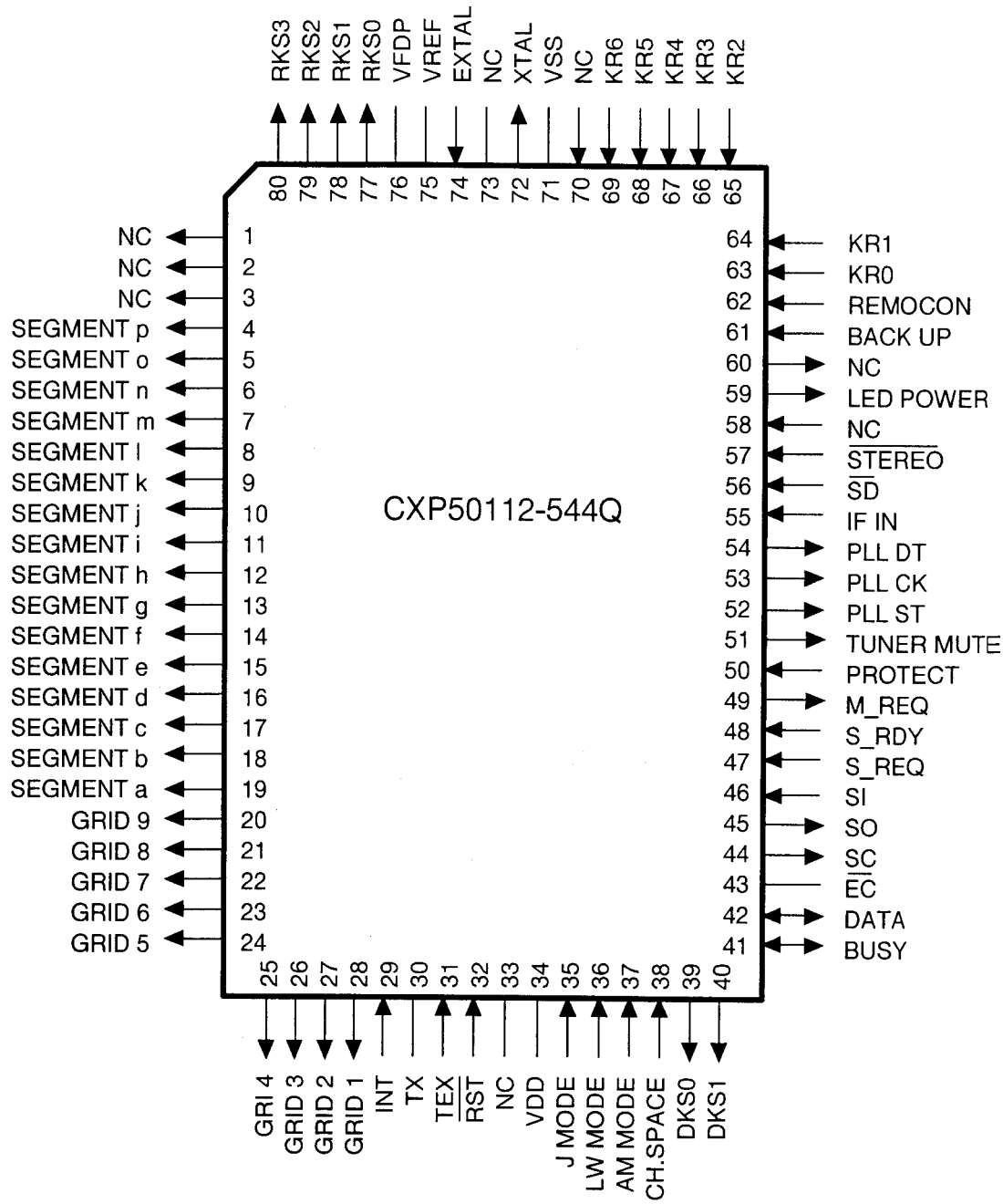
CIRCUIT DESCRIPTION

6.Microprocessor periphery Block Diagram



CIRCUIT DESCRIPTION

7.Pin connection



CIRCUIT DESCRIPTION

8.Pin Description

PD: Pull down, PU: pull up

Pin No.	Name	I/O	Description	Processing
1	UNUSED	—		OPEN
2	UNUSED	—		OPEN
3	UNUSED	—		OPEN
4	SEGMENT 16	O	FL Segment p	PD (−30 V)
5	SEGMENT 15	O	FL Segment o	PD (−30 V)
6	SEGMENT 14	O	FL Segment n	PD (−30 V)
7	SEGMENT 13	O	FL Segment m	PD (−30 V)
8	SEGMENT 12	O	FL Segment l	PD (−30 V)
9	SEGMENT 11	O	FL Segment k	PD (−30 V)
10	SEGMENT 10	O	FL Segment j	PD (−30 V)
11	SEGMENT 9	O	FL Segment i	PD (−30 V)
12	SEGMENT 8	O	FL Segment h	PD (−30 V)
13	SEGMENT 7	O	FL Segment g	PD (−30 V)
14	SEGMENT 6	O	FL Segment f	PD (−30 V)
15	SEGMENT 5	O	FL Segment e	PD (−30 V)
16	SEGMENT 4	O	FL Segment d	PD (−30 V)
17	SEGMENT 3	O	FL Segment c	PD (−30 V)
18	SEGMENT 2	O	FL Segment b	PD (−30 V)
19	SEGMENT 1	O	FL Segment a	PD (−30 V)
20	GRID 8	O	FL Grid 9G	PD (−30 V)
21	GRID 7	O	FL Grid 8G	PD (−30 V)
22	GRID 6	O	FL Grid 7G	PD (−30 V)
23	GRID 5	O	FL Grid 6G	PD (−30 V)
24	GRID 4	O	FL Grid 5G	PD (−30 V)
25	GRID 3	O	FL Grid 4G	PD (−30 V)
26	GRID 2	O	FL Grid 3G	PD (−30 V)
27	GRID 1	O	FL Grid 2G	PD (−30 V)
28	GRID 0	O	FL Grid 1G	PD (−30 V)
29	INT	I	Interrupt terminal (unused)	GND
30	TX	—	32 kHz oscillator terminal (unused)	OPEN
31	TEX	I	32 kHz oscillator terminal (unused)	GND
32	$\overline{\text{RST}}$	I/O	Reset terminal	
33	UNUSED	—		OPEN
34	VDD	—	Power supply	
35	J MODE	I	J/$\overline{\text{Others}}$	
36	LW MODE	I	with LW/$\overline{\text{without LW}}$	
37	AM MODE	I	1610/$\overline{1700}$	
38	CH. SPACE	I	50K/$\overline{100K}$	
39	DSK0	O	Deck section key scan 0	DIODE required
40	DKS1	O	Deck section key scan 1	DIODE required

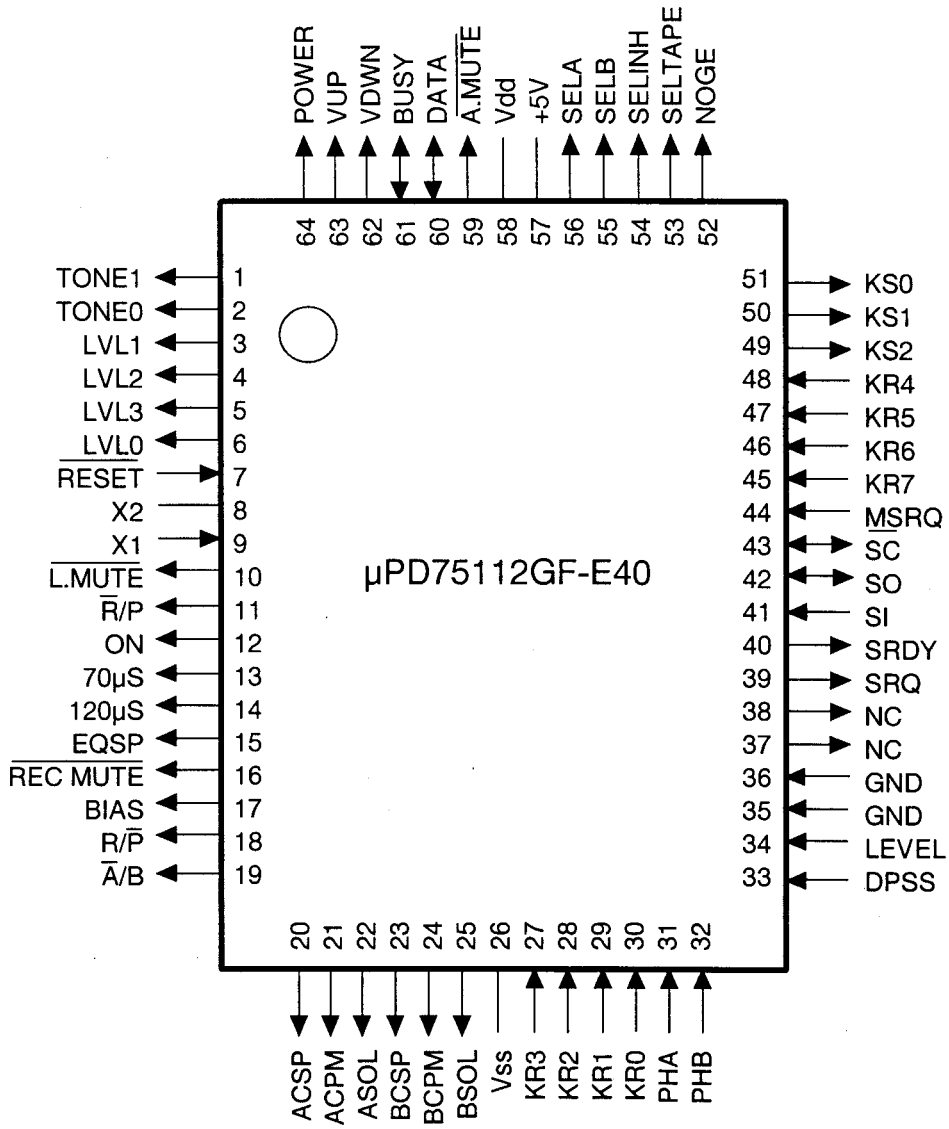
CIRCUIT DESCRIPTION

Pin No.	Name	I/O	Description	Processing
41	BUSY	I/O	Serial "BUSY"	
42	DATA	I/O	Serial "DATA"	
43	UNUSED	—		GND
44	SC	O	Communication clock output	PU (+5V)
45	SO	O	Communication data output	PU (+5V)
46	SI	I	Communmication data input	PU (+5V)
47	S_REQ	I	Slave communication request	PD (GND)
48	S_RDY	I	Slave communication authorization	PD (GND)
49	M-REQ	O	Master communicatioin request	PD (GND)
50	PROTECT	I	Protection input	PD (GND)
51	TUNER MUTE	O	Tuner mute	PD (GND)
52	PLL_ST	O	PLL strobe	PD (GND)
53	PLL_CK	O	PLL clock	PD (GND)
54	PLL_DT	O	PLL data	PD (GND)
55	IF_IN	I	IF count input terminal	PD (GND)
56	$\overline{SD}$	I	SD input	PD (GND)
57	$\overline{STEREO}$	I	STEREO input	PD (GND)
58	UNUSED	I		PD (GND)
59	POWER	O	LED POWER	
60	UNUSED	O		OPEN
61	BACKUP	I	Backup input	
62	REMOCON	I	Remote controller input	
63	KR0	I	Key return 0	PD (GND)
64	KR1	I	Key return 1	PD (GND)
65	KR2	I	Key return 2	PD (GND)
66	KR3	I	Key return 3	PD (GND)
67	KR4	I	Key return 4	PD (GND)
68	KR5	I	Key return 5	PD (GND)
69	KR6	I	Key return 6	PD (GND)
70	UNUSED	I		PD (GND)
71	VSS	—	GND	
72	XTAL	—	Oscillator terminal (4.19 MHz XTAL)	
73	UNUSED	—		
74	EXTAL	I	Oscillator terminal (4.19 MHz XTAL)	
75	VREF	—	Voltage detect reference voltage terminal (unused)	
76	VFDP	—	FL load power supply terminal (−30V)	
77	RKS0	O	Receiver section key scan 0	
78	RKS1	O	Receiver section key scan 1	
79	RKS2	O	Receiver section key scan 2	
80	RKS3	O	Receiver section key scan 3	

CIRCUIT DESCRIPTION

Deck Microprocessor : μPD75112GF-E40 (X28-: IC20)

1.Pin connection



CIRCUIT DESCRIPTION

2.Pin Description

Pin No.	Name	I/O	Description		
1	TONE1	O	Tone circuit control termimal 1		
2	TONE0	O	Tone circuit control termimal 0		
3	LVL1	O	Record level control termimal 1		
4	LVL2	O	Record level control termimal 2		
5	LVL3	O	Record level control termimal 3		
6	LVL0	O	Record level control termimal 0		
7	$\overline{\text{RESET}}$	I	Microprocessor reset terminal	H = NORMAL	L = RESET
8	X2	—	4.19 MHz oscillator terminal		
9	X1	—	4.19 MHz oscillator terminal		
10	$\overline{\text{L.MUTE}}$	O	Deck line mute PULL DOWN with a resistor of several thousand ohms		H = MUTE OFF L = MUTE ON
11	$\overline{\text{R}}$/P (PDOLPB)	O	DOLBY REC/PLAY changeover	H = PLAY	L = REC
12	ON (PDOLON)	O	DOLBY ON/OFF changeover	H = DOLBY ON	L = DOLBY OFF
13	70μS (PCR02)	O	Tape chrome selection	H = CrO_2	L = NORMAL
14	120μS (PNORMAL)	O	Tape normal selection	H = NORMAL	L = CrO_2
15	EQSP	O	Equalizer changeover	H = HI SPEED	L = NORMAL
16	$\overline{\text{RECMUTE}}$	O	Deck REC mute PULL DOWN with a resistor of several thousand ohms		H = MUTE OFF L = MUTE ON
17	BIAS	O	Bias control	H = BIAS ON	L = BIAS OFF
18	R/$\overline{\text{P}}$	O	REC/PLAY changeover B head		H = REC L = PLAY
19	$\overline{\text{A}}$/B	O	Playback equalizer A/B changeover	H = B	L = A
20	ACSP	O	A mechanism motor speed control		H = NORMAL L = HI SPEED
21	ACPM	O	A mechanism motor control	H = MOTOR ON	L = MOTOR OFF
22	ASOL	O	A mechanism solenoid control	H = ON	L = OFF
23	BCSP	O	B mechanism motor speed control	H = NORMAL	L = HISPEED
24	BCPM	O	B mechanism motor control	H = MOTOR ON	L = MOTOR OFF
25	BSOL	O	B mechanism solenoid control	H = ON	L = OFF
26	VSS	—	GND terminal Connect to GND		
27	KR3	I	GE connection detect terminal	H = GE OFF	L = GE ON
28	KR2	I	UNUSED	H = OFF	L = ON
29	KR1	I	UNUSED	H = OFF	L = ON
30	KR0	I	Mechanism switch input 0	H = OFF	L = ON
31	PHA	I	A reel rotation detect sensor input Rotating with change		
32	PHB	I	B reel rotation detect sensor input Rotating with change		
33	DPSS	I	Inter-track detect input Rotating with change		H = request L = No request

CIRCUIT DESCRIPTION

Pin No.	Name	I/O	Description
34	LEVEL	I	CCRS level detect input
35		I	Unused Connect to GND
36		I	Unused Connect to GND
37	$\overline{\text{T.MUTE}}$	O	Tuner mute output H= MUTE OFF Unused L= MUTE ON
38		O	Unused Open
39	SRQ	O	Deck communication request output H= request L= No request
40	SRDY	O	Deck communication authorization output H= Communication authorized L= Communication prohibited
41	SI	I	Deck data input
42	SO	O	Decl data output
43	$\overline{\text{SC}}$	I	Deck clock input
44	MSRQ	I	Receiver communication request input H= R request L= No R request
45	KR7	I	Mechanism switch input 7 H= OFF L= ON
46	KR6	I	Mechanism switch input 6 H= OFF L= ON
47	KR5	I	Mechanism switch input 5 H= OFF L= ON
48	KR4	I	Mechanism switch input 4 H= OFF L= ON
49	KS2	O	Mechanism switch scan output 2 H= SCAN OFF L= SCAN ON
50	KS1	O	Mechanism switch scan output 1 H=SCAN OFF L= SCAN ON
51	KS0	O	Mechanism SW scan output 0 H= SCAN OFF L= SCAN ON
52	NOGE	O	GE connectin control output H= GE OFF L= GE ON
53	SELTAPE	O	Select TAPE
54	SELINH	O	TC4052 INHBIT control
55	SELB	O	TC4052 control
56	SELA	O	TC4052 control
57	+5V	—	Connect to VDD (5V)
58	VDD	—	Power supply terminal Connect to +5V
59	$\overline{\text{A.MUTE}}$	O	Audio section mute output H= MUTE OFF PULL DOWN with a resistor of several thousand ohms L= MUTE ON
60	DATA	I/O	System control DATA I/O
61	BUSY	I/O	System control BUSY I/O
62	VDWN	O	Motor volume control
63	VUP	O	Motor volume control
64	POWER	O	Power terminal H= POWER ON L= POWER OFF

CIRCUIT DESCRIPTION

3.Initial conditions

ITEM	CONDITION
Dolby $\overline{R}$/P	PLAY
Dolby ON/$\overline{OFF}$	OFF
R/$\overline{P}$	PLAY
$\overline{A}$/B	A
EQ SPEED	NORMAL
$\overline{REC\ MUTE}$	ON
$\overline{LINE\ MUTE}$	ON
$\overline{MUTE}$	ON
BIAS	OFF
NOR/$\overline{CrO_2}$	NORMAL
$\overline{NOR}$/CrO_2	NORMAL
Selector	TUNER
Recording Level	−15dB
Key Selection	B

Initial set conditions

Pulling out the power cord and then reinserting it restores the initial settings.

4.Test mode

(1) How to set and cancel test mode

The test mode is entered by plugging in the power cord while depressing the selector "TAPE" key. Test mode is cleared by pressing other selector keys or by turnig off power to the system.

(2) Actuation specifications

A) Play actuation test

When you turn off the TIMER REC switch, insert casettes into A and B and turn the system on, after about 4 seconds, the following occur in succession : Deck A FWD play 5 second →HI SPEED 1.5 seconds → RVS play 2 seconds → STOP. Then the same functions are carried out for Deck B.

B) 4 second REC & PLAY

When you press the REC key, the following occur in succession : REC for 4 seconds at REC VR LEVEL −22dB Rewind to REC start position →PLAY. Even during recording, you can switch the C) actuation mode and DOLBY ON/OFF.

C) REC VR level switching

Set to −22dB when the system is turned on. Changes in 3 steps from ∞ to −22dB and then 0dB when you press the HI-DUBB key (UP) or the DUBB key (DOWN).

D) Direction Mode switch test

Displayed as follows :

When the One Way Mode switch is ON

When the One Way Mode switch is OFF

E) CCRS test

When press the CCRS key the REC LEVEL is set to 0dB, the CCRS indicator lights and the REC PAUSE mode is entered. At this time all keys are prohibited except the B deck STOP key. Pressing the STOP key causes the CCRS indicator to illuminate, signaling that the CCRS has been set. Pressing the CCRS key when the CCRS indicator is illuminated clears CCRS mode turns off the indicator.

F) Speed adjustment

When press the FWD PLAY key play begins at normal speed. Pressing THE FF key causes play to proceed at high speed. The head does not go down when the two keys are preessed alternately.

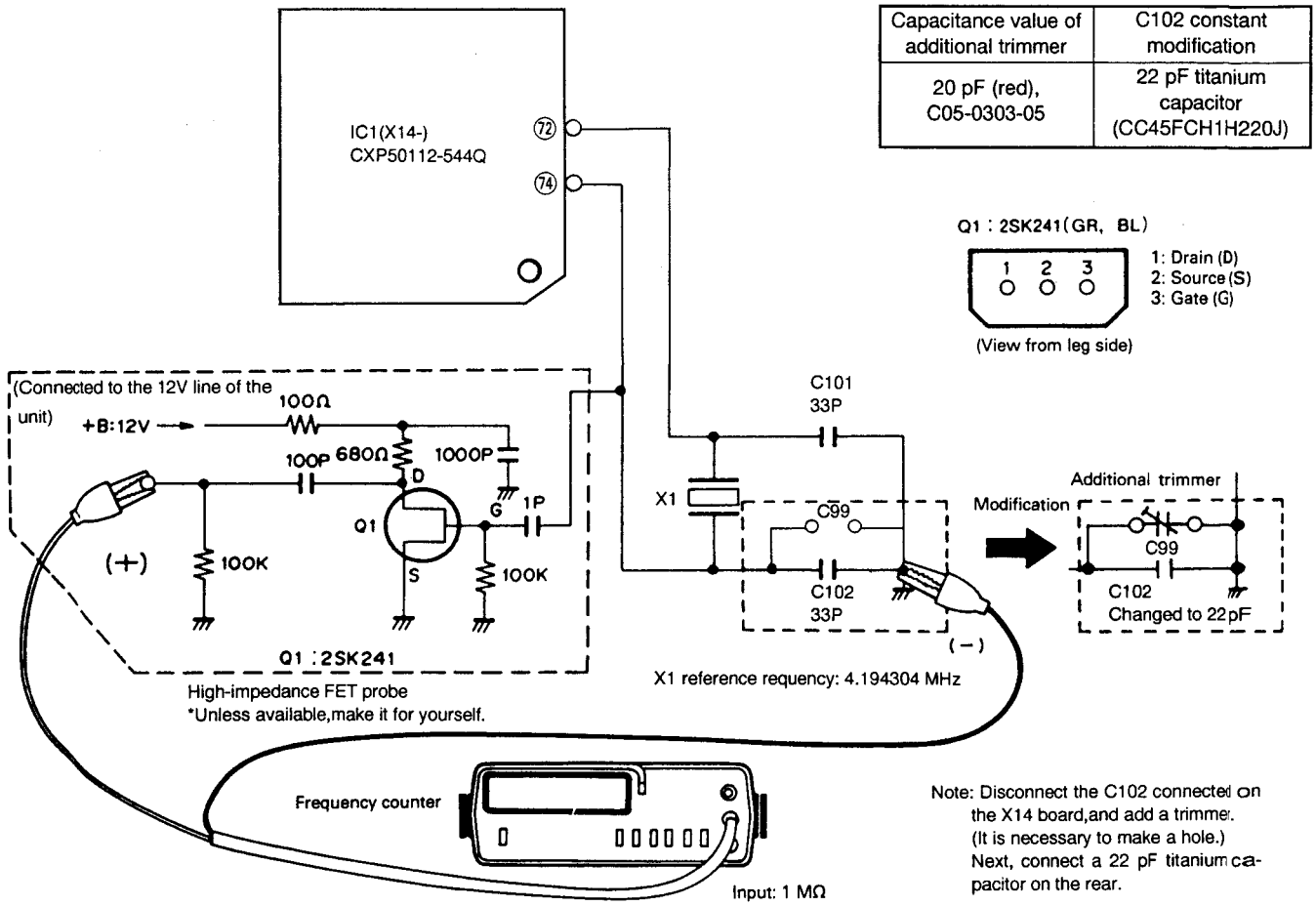
G) KEY input authorization time and LINE MUTE during CCRS

2 second after the system turns on, KEY line input is allowed (normally four seconds later). During test mode LINE MUTE is open even during CCRS setting.

ADJUSTMENT

1.Timer accurary improvement method

Capacitance value of additional trimmer	C102 constant modification
20 pF (red), C05-0303-05	22 pF titanium capacitor (CC45FCH1H220J)



The timer accurary is within +60～ −40 seconds for one month as standard. For improved timer accurary, perform the following procedure:

(1) If the timer accurary is without the standard,replace X1(L77-1176-05) near the microprocessor IC on a printed board (X14-).

(2) Even if within the standard,for further improved accurary ,change the constant of C102 in the crystal oscillation circuit of microprocessor IC1 and add a trimmer.

Adjusment method (Use a high-impedance buffer to avoid frequency deviation.)

Connect a high-accurary frequency counter to pin 74 by way of the FET probe shown above,and adjust the frequency fully up to the first digit of the X1 reference frequency 4,194,304 Hz.(Connect the nagative(-) side of the frequency counter to the GND side of C102.)

Note(a) As regards the positive (+) side of the frequency counter, arrange as short a distance as possible between pin 74 of IC1 and 1P of the input stage of the FET probe.

Note(b) Perform the trimmer adjustment after energization of around 10 minuites at normal temperature.

(3) Monthly error calculation method

For example, when the result of measurement at pin 74 by the frequency counter is fx=4,194,275 Hz...

(Reference frequency fo = 4,194,304[Hz])

$$\text{Monthly error [sec]} = \frac{fx-fo}{fo} \times \text{the number of seconds take for one month} = \frac{4,194,275-4,194,304}{4,194,304} \times (60\times60\times24\times30)$$

$$= -17.9\text{[sec]}$$

*A minus value as the monthly error means a loss.

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	CASSETTE TAPE DECK SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
CASSETTE DECK SECTION		TAPE : NORMAL , DOLBY : OFF , INPUT : LINE				0dBs=0.775V	
I **REC/PLAY HEAD**							
[1]	DEMAGNETI-ZATION	-	-	POWER:OFF Remove the cassette door.	REC/PLAY head	Demagnetive the REC/PLAY head with a head demagnetizer.	
[2]	CLEANING	-	-	PLAY	REC/PLAY head erase head,capstan, pinch roller.	Clean the REC/PLAY head erase head, capstan and pinch roller using a cotton swab slightly damped with alcohol.	
[3]	AZIMUTH	TCC-153 MTT-114 10kHz, -10dB	(B)	PLAY	Azimuth adjustment screw	Maximum output. Adjust so the L.R phase becomes 0.	
II **PC BOARD(X28-2560-10)**							
(1)	TAPE SPEED (HI SPED)	TCC-110 MTT-111 3kHz	(B)	Connect between TP4 and TP5. PLAY	DECK A : VR20 DECK B : VR22	Adjust the tape speed so that a 6kHz signal is produced at the center of the tape.	
(2)	TAPE SPEED (NORMAL)		(B)	No connect between TP4 and TP5. PLAY	DECK A : VR19 DECK B : VR21	Adjust the tape speed so that a 3kHz signal is produced at the center of the tape.	
III **PC BOARD(X28-2560-10)**							
<1>	PLAYBACK LEVEL	MTT-150,TCC-130 400Hz	(B)	PLAY	DECK A: VR11(L) VR12(R) DECK B: VR13(L) VR14(R)	Output level : -2.5dBs	
		MTT-256 315Hz				Output level : -5.5dBs	
		MTT-256U,TCC-160 315Hz				Output level : -1.5dBs	
<2>	RECORD LEVEL	(E) REC PAUSE, monitor output is 315Hz -21.5dBs.	(B)	REC & PLAY	VR15(L) VR16(R)	Record and playback, and adjust so the playback output level becomes 315Hz -21.5dBs.	
<3>	BIAS CURRENT	(E) REC PAUSE, monitor output is 12.5kHz -21.5dBs.	(B)	REC & PLAY	VR17(L) VR18(R)	Record and playback, and adjust so the playback output level becomes 12.5Hz -21.5dBs.	

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION		**BAND: FM**					
1	DISCRIMINATOR	(A) 98.0MHz 1kHz, ±75kHz dev 60dBμ(ANT input)	Connect a DC voltmeter between TP3 and TP4. (X05-)	AUTO or MONO 98.0MHz	L3 (X05-)	0V	(a)
					L4 (X05-)	Minimum distortion.	
2	DISTORTION (STEREO)	(C) 98.0MHz 1kHz, ±68.25kHz dev Pilot: ±7.5kHz dev 60dBμ(ANT input)	(B)	AUTO 98.0MHz	IFT (W02-)	Minimum distortion.	
3	SEPARATION	(C) 98.0MHz 1kHz, ±40kHz dev Pilot: ±6kHz dev Selector: L or R 60dBμ(ANT input)	(B)	AUTO 98.0MHz	VR3 (X05-)	Minimum crosstalk.	
4	TUNING LEVEL	(A) 98.0MHz 1kHz, ±75kHz dev 14dBμ(ANT input) 75Ω 18dBμ(ANT input) 300Ω	(B)	AUTO or MONO 98.0MHz	VR1 (X05-)	Adjust VR1 and stop at the point where FL201 (TUNED) goes ON.	
AM SECTION		**BAND: AM(MW)**					
(1)	TUNING LEVEL	(D) 1008 kHz 400Hz, 30% mod 26 dBμ (ANT input)	(B)	1008 kHz	VR2 (X05-)	Adjust VR2 and stop at the point where FL201 (TUNED) goes ON.	

When TUNER PCB (X05-) is disconnected from main unit, connect PCB's GND (ANT shield plate) and main unit chassis using aligator clip. Then, check TUNER PCB.

REGLAGE

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU MAGNETOPHONE A CASSETTE	POINT DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION DU MAGNETOPHONE		TAPE : NORMAL , DOLBY : OFF , INPUT : LINE				0dBs=0.775V	
I **TETE D'ENREGISTREMENT/LECTURE**							
[1]	DEMAGNETISATION	-	-	POWER:OFF Eloigner la porte.	Tête D'ENREGIST-REMENT/ LECTURE	Demagnétiser la tête D'ENREGISTREMENT/ LECTURE avec un démagnétiseur de tête.	
[2]	NETTOYAGE	-	-	PLAY	Tête D'ENREGIST-REMENT/ LECTURE tête d'effacement, cabstan, galetpressurer.	Nettoyer la tête D'ENREGISTREMENT/ LECTURE la tête d'effacement,le cabstan et le galetpresseur avec un coton-tige légèrement imbibé d'alcool.	
[3]	AZIMUT	TCC-153 MTT-114 10kHz, -10dB	(B)	PLAY	Vis d'azimut.	Sortie maximer. Régler la différence de niveu entre les canaux L,et R à 0.	
II **PLAQUE IMPRIMEE(X28-2560-10)**							
(1)	VITESSE DE DEFILEMENT (HI SPED)	TCC-110 MTT-111 3kHz	(B)	Connecteur un cablage entre les TP4 et TP5. PLAY	DECK A : VR20 DECK B : VR22	Régler la vitesse de bande de façon qu'un signal de 6 kHz soit produit au centre de la bande.	
(2)	VITESSE DE DEFILEMENT (NORMAL)		(B)	Non connecteur un cablage entre les TP4 et TP5. PLAY	DECK A : VR19 DECK B : VR21	Régler la vitesse de bande de façon qu'un signal de 3 kHz soit produit au centre de la bande.	
III **PLAQUE IMPRIMEE(X28-2560-10)**							
<1>	NIVEU DE LECTURE	MTT-150,TCC-130 400Hz	(B)	PLAY	DECK A: VR11(L) VR12(R) DECK B: VR13(L) VR14(R)	Niveu de sortie : -2,5dBs	
		MTT-256 315Hz				Niveu de sortie : -5,5dBs	
		MTT-256U,TCC-160 315Hz				Niveu de sortie : -1,5dBs	
<2>	NIVEU D'ENREGIST-REMENT	(E) REC PAUSE, sortie de moniteur à 315Hz -21,5dBs.	(B)	REC & PLAY	VR15(L) VR16(R)	Enregistrer et lecture,régler façon que la sorte de Niveu de lecture soit à 315Hz -21,5dBs.	
<3>	COURANT DE POLARISATION	(E) REC PAUSE, sortie de moniteur à 12,5kHz -21,5dBs.	(B)	REC & PLAY	VR17(L) VR18(R)	Enregistrer et lecture,régler façon que la sorte de Niveu de lecture soit à 12,5Hz -21,5dBs.	

REGLAGE

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINT DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION MF		**BANDE: FM**					
1	DETECTEUR	(A) 98,0MHz 1kHz, ±75kHz dév 60dBμ(Entrée ANT)	Relier un voltmètre CC entre les TP3 et TP4. (X05-)	AUTO ou MONO 98,0MHz	L3 (X05-)	0V	(a)
					L4 (X05-)	Distorsion minimale.	
2	DISTORSION (STEREO)	(C) 98,0MHz 1kHz, ±68,25kHz dév Signal pilote: ±7,5 kHz dév 60dBμ(Entrée ANT)	(B)	AUTO 98,0MHz	IFT (W02-)	Distorsion minimale.	
3	SEPARATION	(C) 98,0MHz 1kHz, ±40kHz dév Signal pilote: ±6 kHz dév Selecteur: L ou R 60dBμ(Entrée ANT)	(B)	AUTO 98,0MHz	VR3 (X05-)	Diaphonie minimale.	
4	NIVEAU D'ACCORDER	(A) 98,0MHz 1 kHz, ±75 kHz dév 14dBμ(Entrée ANT) 75Ω 18dBμ(Entrée ANT) 300Ω	(B)	AUTO ou MONO 98,0MHz	VR1 (X05-)	Ajuster VR1 arréter le mouvement de VR1 au moment oú le FL201 (TUNED) s'allume.	
SECTION MA		**BANDE: AM(MW)**					
(1)	NIVEAU D'ACCORDER	(D) 1008 kHz 400 Hz, 30% mod 26dBμ(Entrée ANT)	(B)	1008 kHz	VR2 (X05-)	Ajuster VR2 arréter le mouvement de VR1 au moment oú le FL201 (TUNED) s'allume.	

ABGLEICH

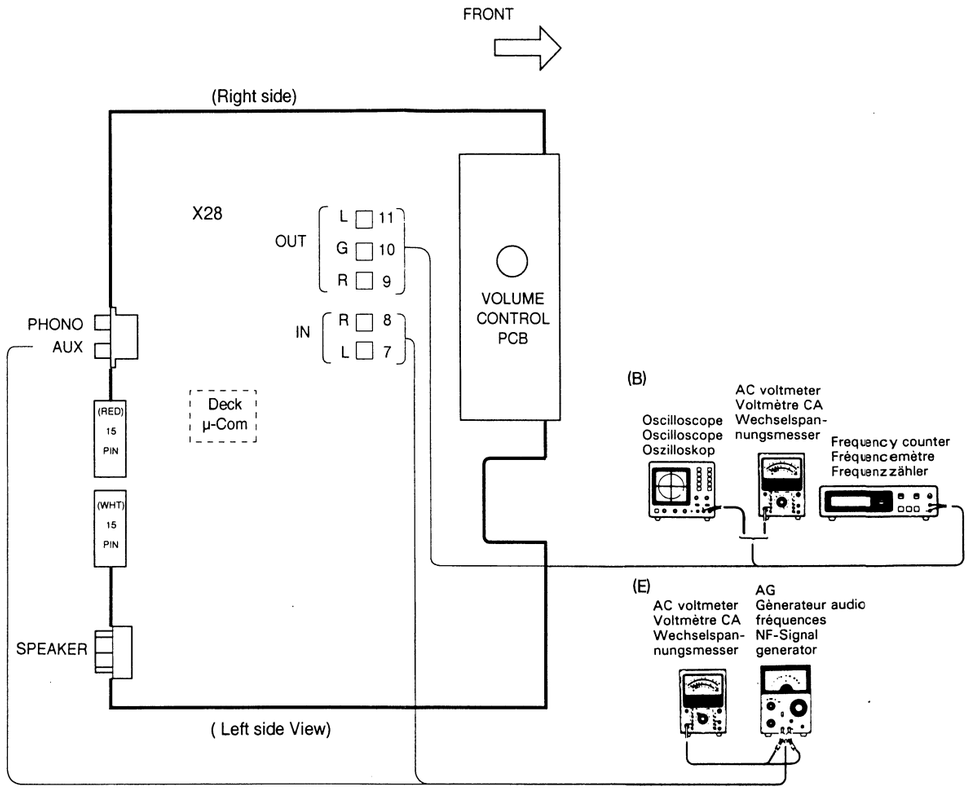
NR	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	KASSETTENGERÄT EINSTELLUNG	ABGLEICH PUNKTE	ABGLEICHEN FÜR	AB
KASSETTEN-DECK-ABTEILUNG		TAPE : NORMAL , DOLBY : OFF , EINGANG : LINE				0dBs=0,775V	
I AUFNAHME/WIEDERGABE KOPR							
[1]	ENTMAGNETI-SIERUNG	-	-	POWER:OFF Den Kassettenfach deckel oben herausziehen.	AUFNAHME/ WIEDERGABE-kopf	Entmagnetisierung von dem AUFNAHME/WIEDERGABE-kopf mit einem Tonkopf Entmagnetisierungsdrossei.	
[2]	REINIGUNG	-	-	PLAY	AUFNAHME/ WIEDERGABE-kopf Loschkopf, Tonwelle, Andruckrolle.	AUFNAHME/WIEDERGABE-kopf.Loschkopf,Tonwelle und Andruckrolle mit einem leicht mit Alkohol befeuch teten Wattebausch reinigen.	
[3]	AZIMUT EINSTELLUNG	TCC-153 MTT-114 10kHz, -10dB	(B)	PLAY	Azimut-Einstellschraube.	Maximal Ausgang. So Einstellen, daß der Pégelunterschied zwischen dem L und R bei 0dB wird.	
II GEDRUCKTE SCHALTPLATTE(X28-2560-10)							
(1)	BANDGESCH-WINDIGKEIT (HI SPEED)	TCC-110 MTT-111 3kHz	(B)	Einen Schaltdraht zwischen TP4 und TP5 anschießen. PLAY	DECK A : VR20 DECK B : VR22	Die Bandgeschwindigkeit so justieren. daß ein 6 kHz Signal auf der Mitte des Bands erzeugt wird.	
(2)	BANDGESCH-WINDIGKEIT (NORMAL)		(B)	Ein nicht Schaltdraht zwischen TP4 und TP5 anschießen. PLAY	DECK A : VR19 DECK B : VR21	Die Bandgeschwindigkeit so justieren. daß ein 3 kHz Signal auf der Mitte des Bands erzeugt wird.	
III GEDRUCK SCHALTPLATTE(X28-2560-10)							
<1>	WIEDERGABE-PEGEL	MTT-150, TCC-130 400Hz	(B)	PLAY	DECK A: VR11(L) VR12(R) DECK B: VR13(L) VR14(R)	Ausgangspegel : -2,5dBs	
		MTT-256 315Hz				Ausgangspegel : -5,5dBs	
		MTT-256U, TCC-160 315Hz				Ausgangspegel : -1,5dBs	
<2>	AUFNAHME-PEGEL	(E) REC PAUSE, Monitor-Ausgang bei 315Hz -21,5dBs.	(B)	REC & PLAY	VR15(L) VR16(R)	Aufnahme und wiedergabe,und so einstellen daß der wiedergabe ausgangs pegel bei 315 Hz -21.5dBs.	
<3>	LEERLAUF-STROM	(E) REC PAUSE, Monitor-Ausgang bei 12,5Hz -21,5dBs.		REC & PLAY	VR17(L) VR18(R)	Aufnahme und wiedergabe,und so einstellen daß der wiedergabe ausgangs pegel bei 315 Hz -21.5dBs.	

ABGLEICH

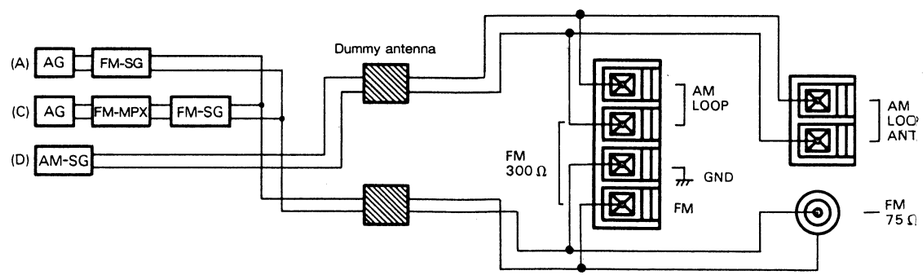
NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	TUNER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FUR	ABB.
UKW-EMPFANGSABTEILUNG			**BAND: FM**				
1	DETEKTOR	(A) 98,0MHz 1kHz, ±75kHz Hub 60dBμ(ANT-Eingang)	Einen Gleichspannungs-messer zwischen TP3 und TP4 anschließen. (X05-)	AUTO oder MONO 98,0MHz	L3 (X05-)	0V	(a)
					L4 (X05-)	Minimal Klirrfaktor.	
2	KLIRRFAKTOR (STEREO)	(C) 98,0MHz 1kHz, ±68,25kHz Hub Pilotten: ±7,5 kHz Hub 60dBμ(ANT-Eingang)	(B)	AUTO 98,0MHz	IFT (W02-)	Minimal Klirrfaktor.	
3	TRENNUNG	(C) 98,0MHz 1kHz, ±40 kHz Hub Pilotten: ±6 kHz Hub Wähler: L oder R 60dBμ(ANT-Eingang)	(B)	AUTO 98,0MHz	VR3 (X05-)	Optimale Trennung.	
4	ABSTIMM PEGEL	(A) 98,0MHz 1 kHz, ±75 kHz Hub 14dBμ(ANT-Eingang) 75Ω 18 dBμ(ANT-Eingang) 300Ω	(B)	AUTO oder MONO 98,0MHz	VR1 (X05-)	Den Pegel wiederstand aufdrehen, und dem VR1 Halt geben wobei den FL201 (TUNED) anzeiger leuchtet wird.	
MW-EMPFANGSABTEILUNG			**BAND: AM(MW)**				
(1)	ABSTIMM PEGEL	(D) 1008 kHz 400 Hz, 30% mod 26dBμ(ANT-Eingang)	(B)	1008 kHz	VR2 (X05-)	Den Pegel wiederstand aufdrehen, und dem VR2 Halt geben wobei den FL201 (TUNED) anzeiger leuchtet wird.	

RX-28

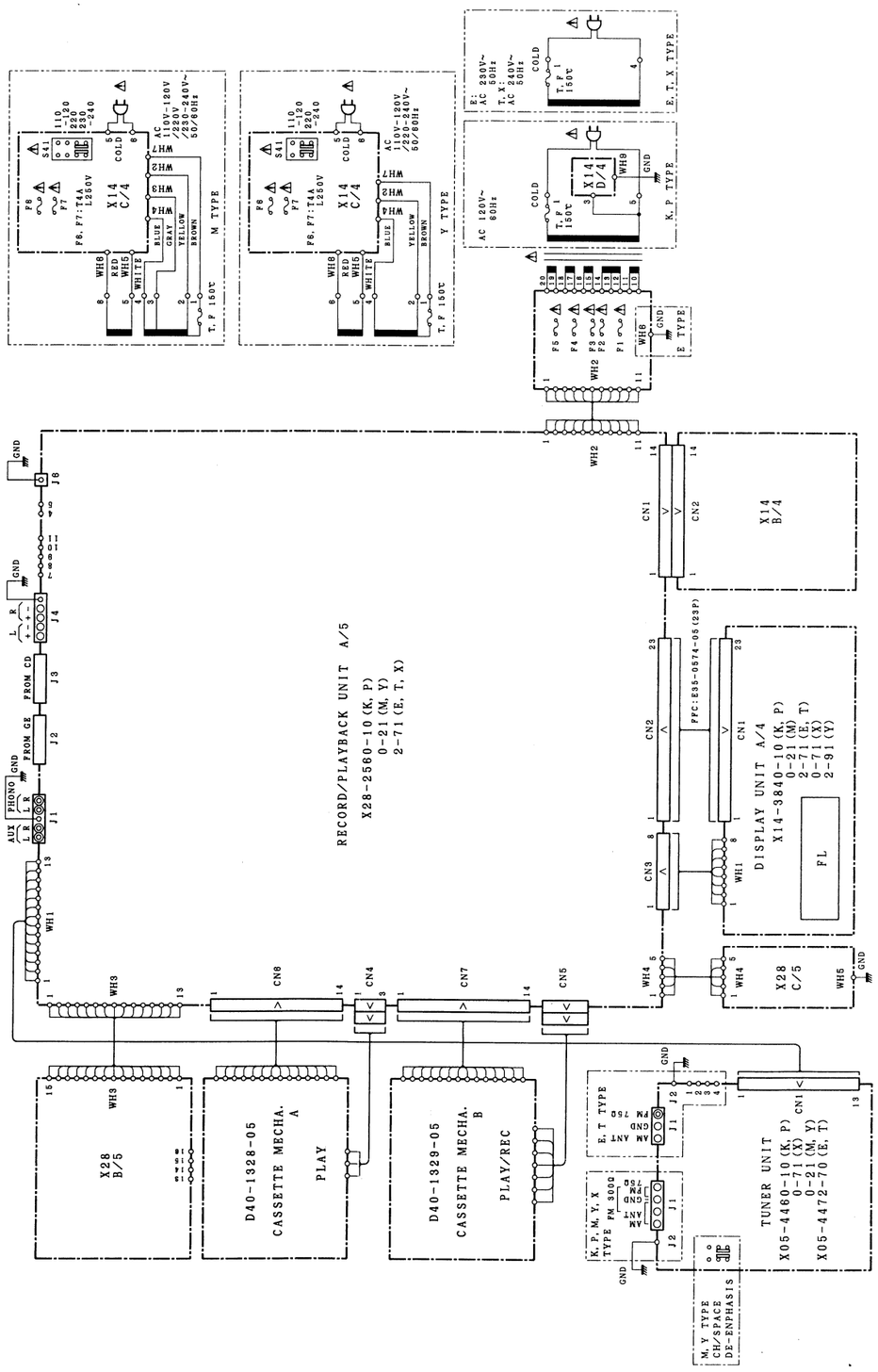
ADJUSTMENT/REGLAGE/ABGLEICH



Connection

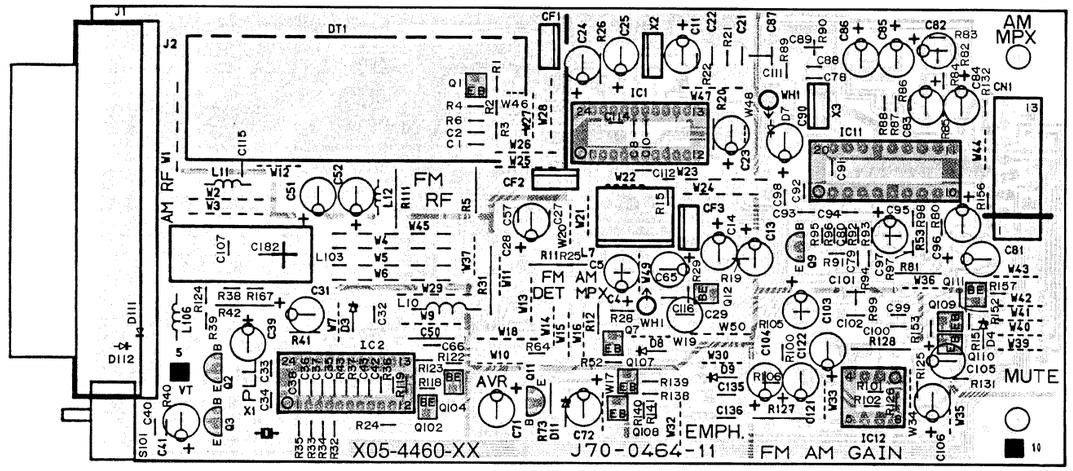


WIRING DIAGRAM



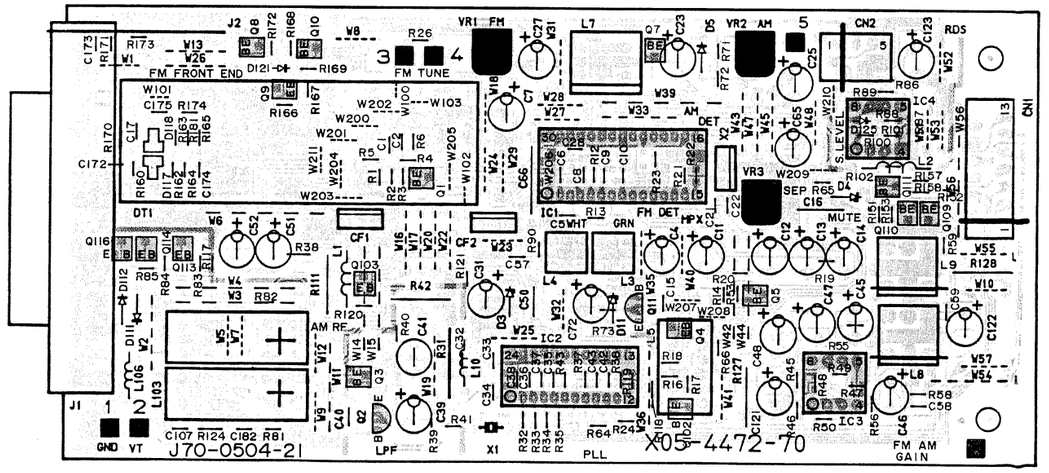
PC BOARD (Component side view)

TUNER UNIT(X05-4460-XX)



FRONT

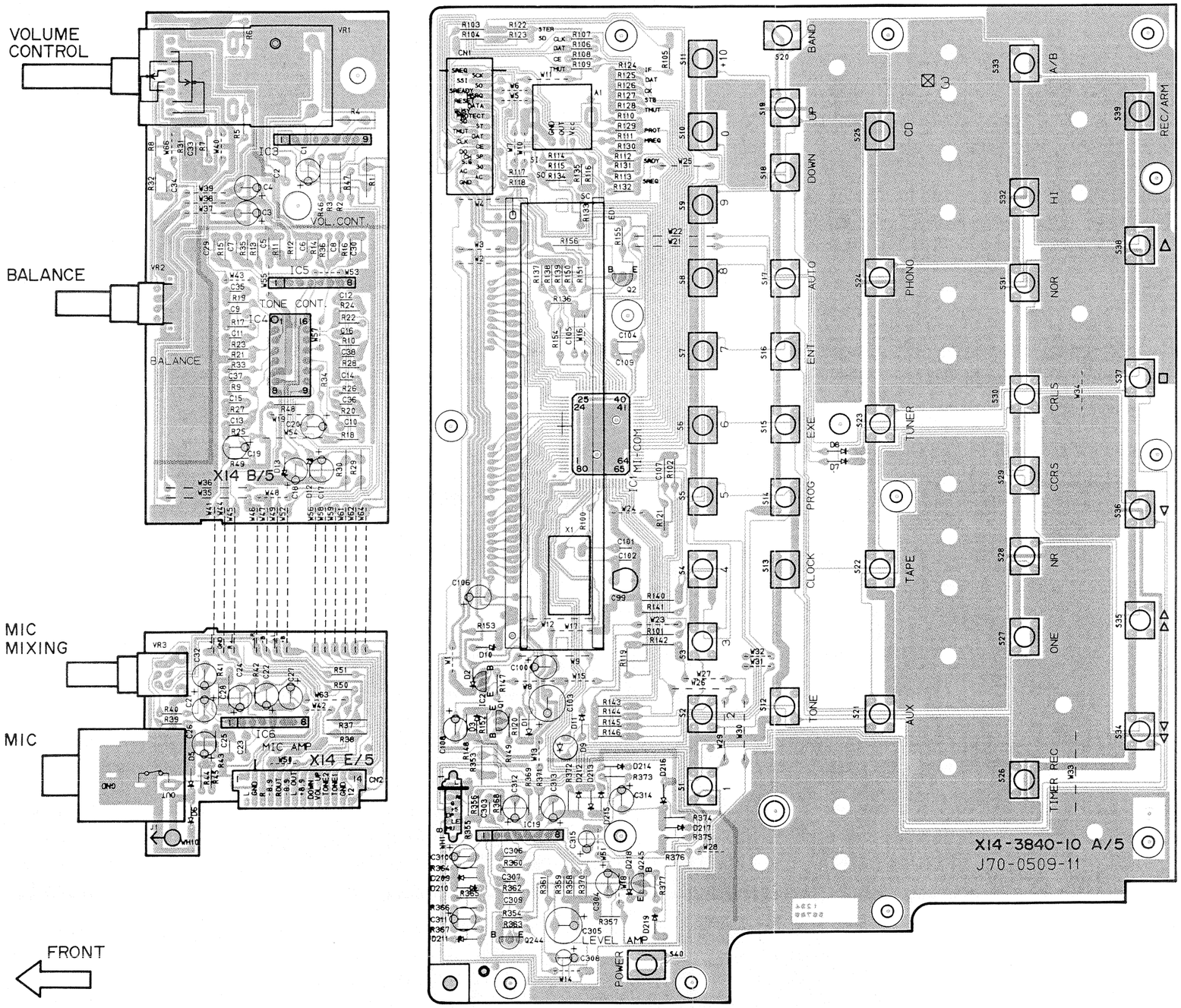
TUNER UNIT(X05-4472-70)

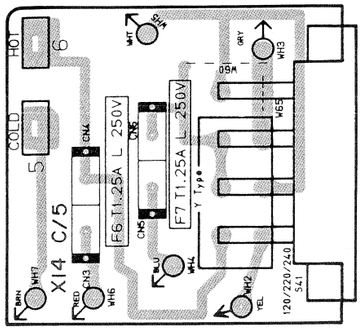


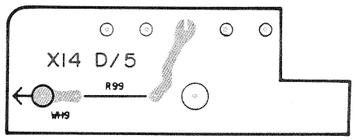
Refer to the schematic diagram for the values of resistors and capacitors.

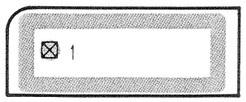
PC BOARD (Component side view)

DISPLAY UNIT(X14-384X-XX)



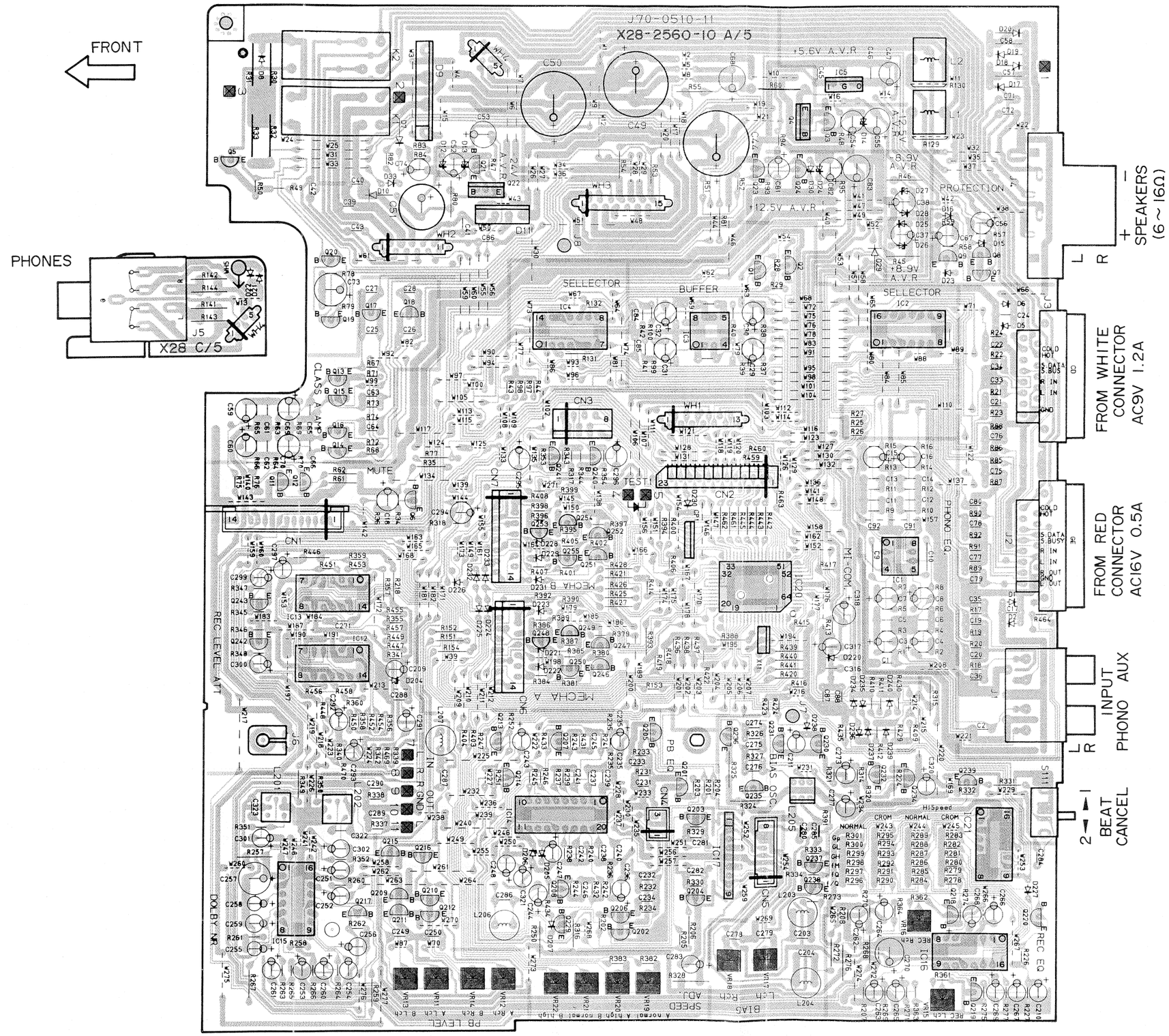


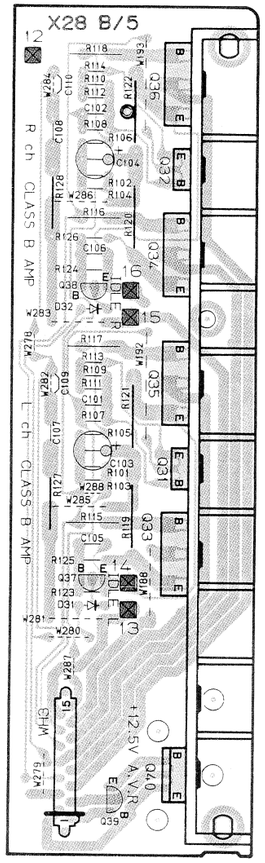


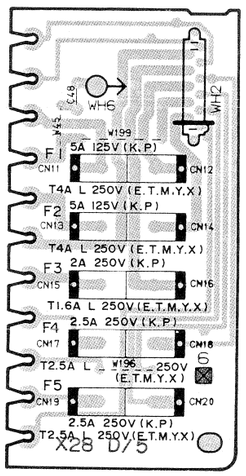


Refer to the schematic diagram for the values of resistors and capacitors.

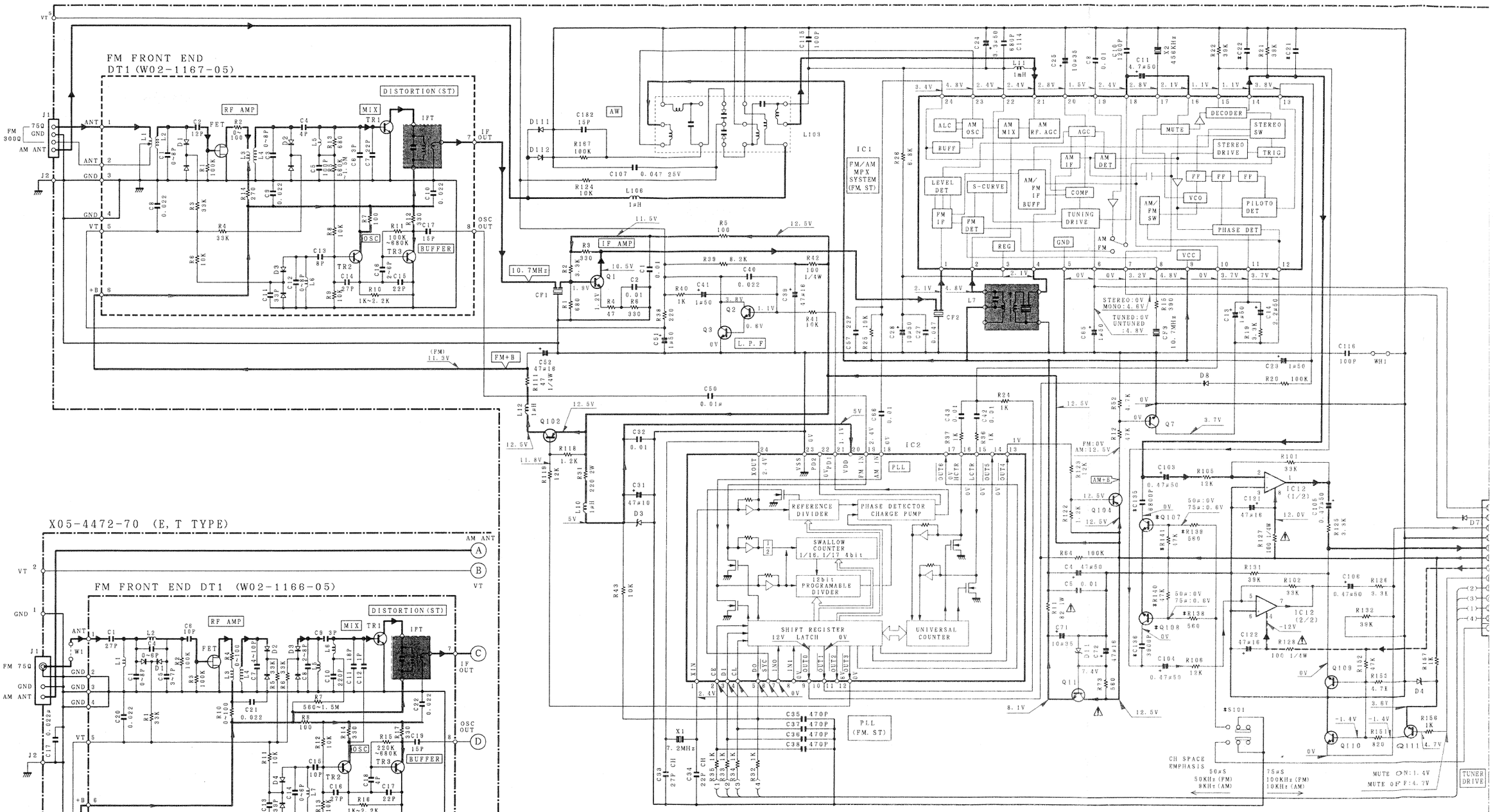
PC BOARD (Component side view) RECORD/PLAYBACK AMP UNIT(X28-256X-XX)



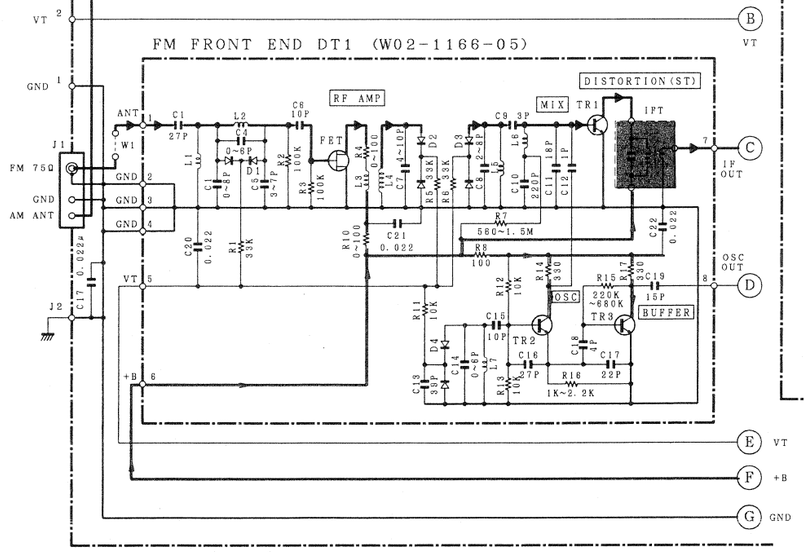




X05-4460-11(K, P) X05-4460-71(X) X05-4460-21(M, Y, I)

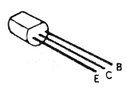


X05-4472-70 (E, T TYPE)

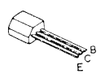


IC1	: LA1831	Q1	: 2SC2714 (R, O)
IC2	: LC7218	Q2	: 2SC1845 (F, E)
IC12	: NJM4565D	Q3	: 2SC2458 (Y, GR) or 2SC3311A (Q, R) 2SC1740S (Q, R) or 2SC2785 (F, E)
		Q7, 107~110	: 2SC2412K
		Q11	: 2SD863 (E, F)
		Q102, 104, 111	: 2SA1037K
		D3	: HZS5. 1N(B2) or RD5. 1ES(B2)
		D4	: HZS3. 3N(B2) or RD3. 3ES(B2)
		D7, 111, 112	: MA110
		D8, 9	: HSS104 or 1SS133
		D11	: HZS8. 2N(B2) or RD8. 2ES(B2)

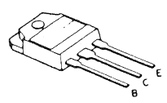
UNIT	ABB	REF. NO / DISTINATION	C21, 22	C135, 136	Q107, 108	S
0-11	K, P	USA, CANADA	0. 024	NO	NO	N
0-21	M, Y, I	PX, OTHER AREAS	0. 016	YES	YES	YI
0-71	X	AUSTRALIA	0. 016	NO	NO	N



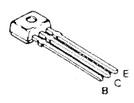
2SA954
2SA992
2SC1845
2SC2003
2SC3246
2SD1302
2SD863



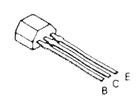
RN1203
RN1210



2SB1531
2SD2340



2SA1175
2SC2785



DTA124ES
DTC124ES
DTC143TS
RN2203
2SA933S
2SC1740S

2SA1037K
2SC2412K
2SC2714

X05-4472-70 (E, T TYPE)

Q7, 107~110 : 2SC2412K
Q11 : 2SD863 (E, F)
Q102, 104, 111 : 2SA1037K

D3 : HZS5. 1N (B2) or RD5. 1ES (B2)
D4 : HZS3. 3N (B2) or RD3. 3ES (B2)
D7, 111, 112 : MA110
D8, 9 : HSS104 or 1SS133
D11 : HZS8. 2N (B2) or RD8. 2ES (B2)

UNIT	ABB	REF. NO / DISTINATION	C21, 22	C135, 136	Q107, 108	S101	R138~141
0-11	K, P	USA, CANADA	0. 024	NO	NO	NO	NO
0-21	M, Y, I	PX, OTHER AREAS	0. 016	YES	YES	YES	YES
0-71	X	AUSTRALIA	0. 016	NO	NO	NO	NO

IC1 : LA1851N
IC2 : LC7218
IC3 : NJM4565D

Q1 : 2SC2714 (R, O)
Q2 : 2SC1845 (F, E)
Q3, 4, 7, 109, 110, 113, 114, 116 : 2SC2412K

Q5, 102, 103, 111 : 2SA1037K
Q11 : 2SD863 (E, F)

D3 : HZS5. 1N (B2) or RD5. 1ES (B2)
D4 : HZS3. 3N (B2) or RD3. 3ES (B2)

D5, 111, 112 : HSS104 or 1S
D11 : HZS8. 2N (B2) or RD8. 2ES (B2)

2SA1175
2SC2785

DTA124ES
DTC124ES
DTC143TS
RN2203
2SA933S
2SC1740S

2SA1037K
2SC2412K
2SC2714

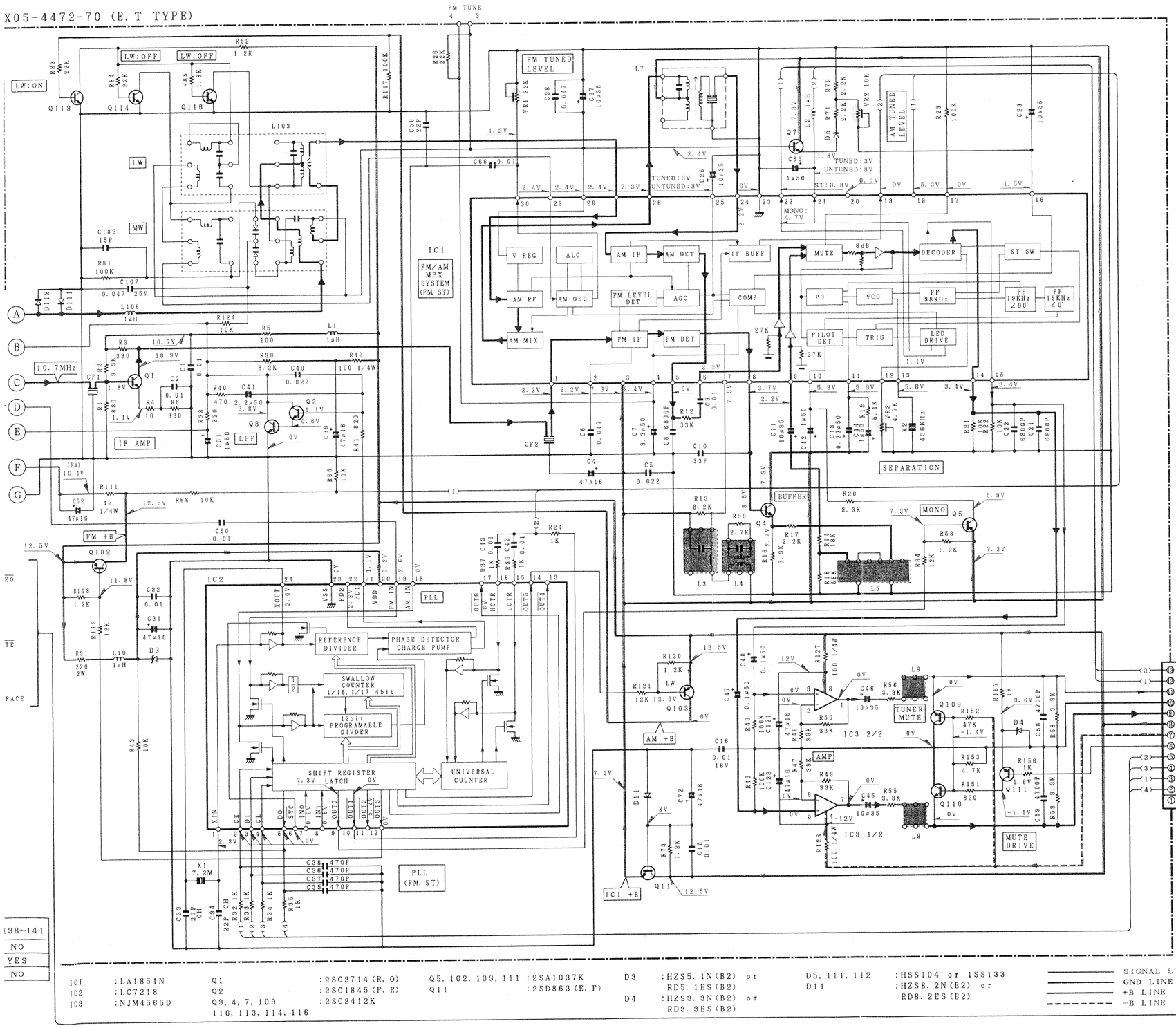
2SC4137

UN4212

2SD2012

HD14066BP

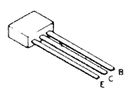
X05-4472-70 (E, T TYPE)



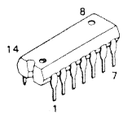
IC1	:LA1851N	Q1	:2SC2714 (R, O)	Q5, 102, 103, 111	:2SA1037K	D3	:HZS5.1N(B2) or RD5.1ES(B2)	D5, 111, 112	:HSS104 or 1SS133
IC2	:LC7218	Q2	:2SC1845 (F, E)	Q11	:2SD863 (E, F)	D4	:HZS3.3N(B2) or RD3.3ES(B2)	D11	:HZS8.2N(B2) or RD8.2ES(B2)
IC3	:NJM4565D	Q3, 4, 7, 109 110, 113, 114, 116	:2SC2412K						

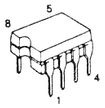
SIGNAL LINE
GND LINE
+B LINE
−B LINE

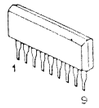
2SC4137

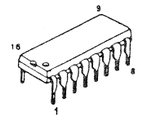

UN4212

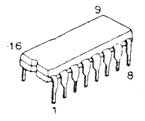
2SD2012

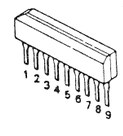

HD14066BP

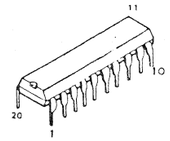

NJM4565D
NJM4565D-D

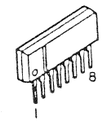

UPC1330HA

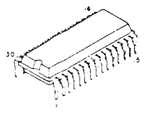

CXA1198AP
XRU4051B
XRU4052B

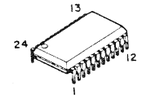

HA12136A

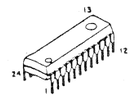

TA8409S

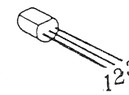

LA3246


LA1851N


LA1831-KEN


NJM4565L


LC7218


S8O740AL

DC voltages are as measured with a high impedance voltmeter with a cassette loaded at playback mode. Values may vary slightly due to variations between individual instruments or/and units. Bias circuit DC voltages are as measured while in the record mode.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance, une cassette étant insérée en mode du lecture. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
Les tensions c.c. du circuit de polarité doivent être mesurées, l'appareil étant en mode d'enregistrement.

Die angegebenen Gleichspannungswerte wurden bei eingesetzter Cassette in der Wiedergabe mit einem hochomigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig. Die angegebenen Gleichspannungswerte der Vormagnetisierungsschaltung wurden in der Aufnahme-Betriebsart gemessen.

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list) ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

RX-28
KENWOOD
Y09-4320-10

X28-256X-XX A/5

A MECHA ASS'Y
(D40-1328-05)

B MECHA ASS'Y
(D40-1329-05) K, P, X, M, Y, I
(D40-1347-05) E, T

A MECHA. HEAD

B MECHA. HEAD

TO X05 CN1

FROM GE

FROM CD

IC2 TRUTH TABLE

INH	A	B	OUTPUT
⑥ PIN	⑩ PIN	⑨ PIN	②, ⑬ PIN
L	L	L	CD
	H	L	AUX
	L	H	PHONO
	H	H	TUNER
H	*	*	NONE

*DON'T CARE.

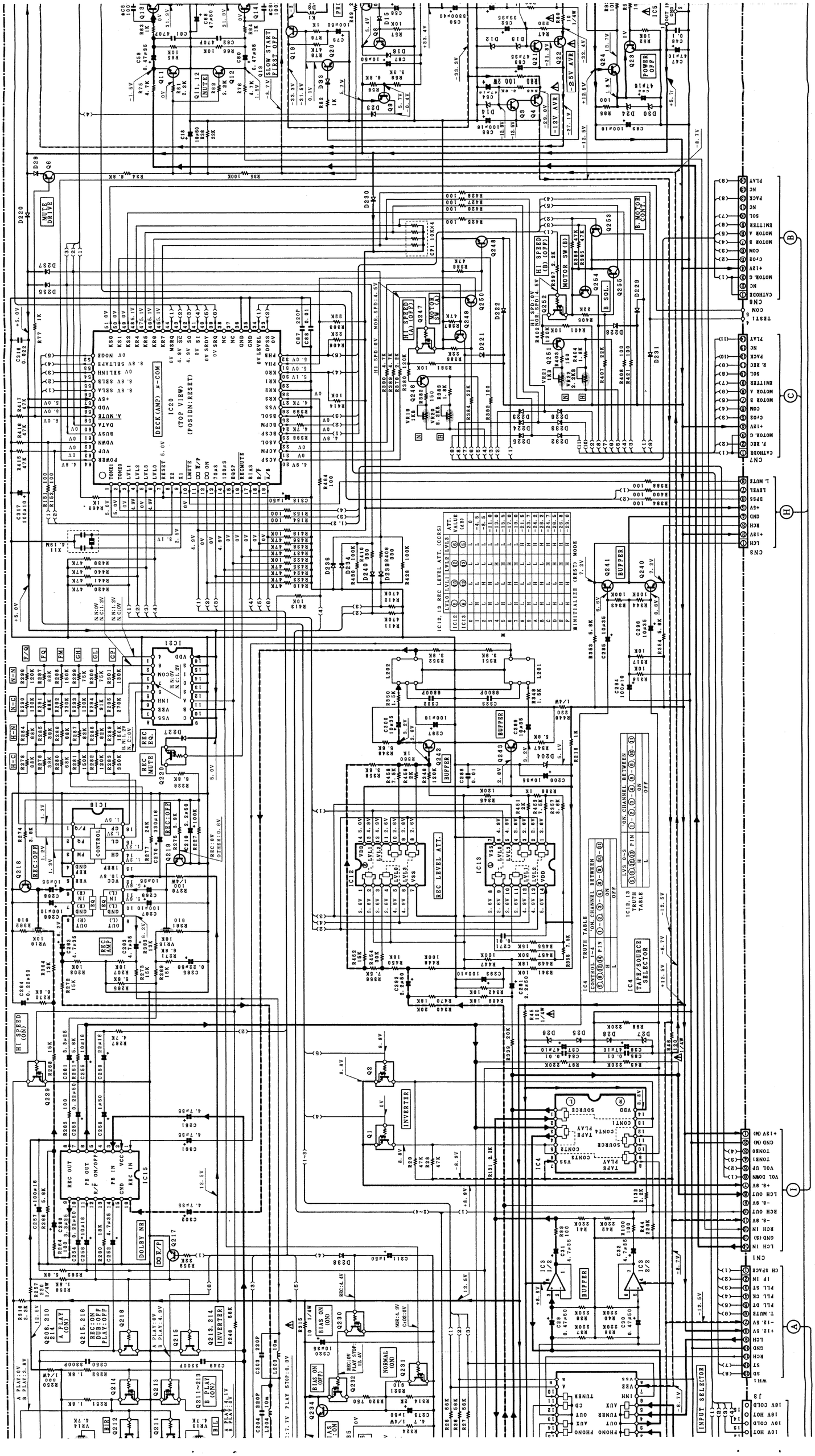
IC4 TRUTH TABLE

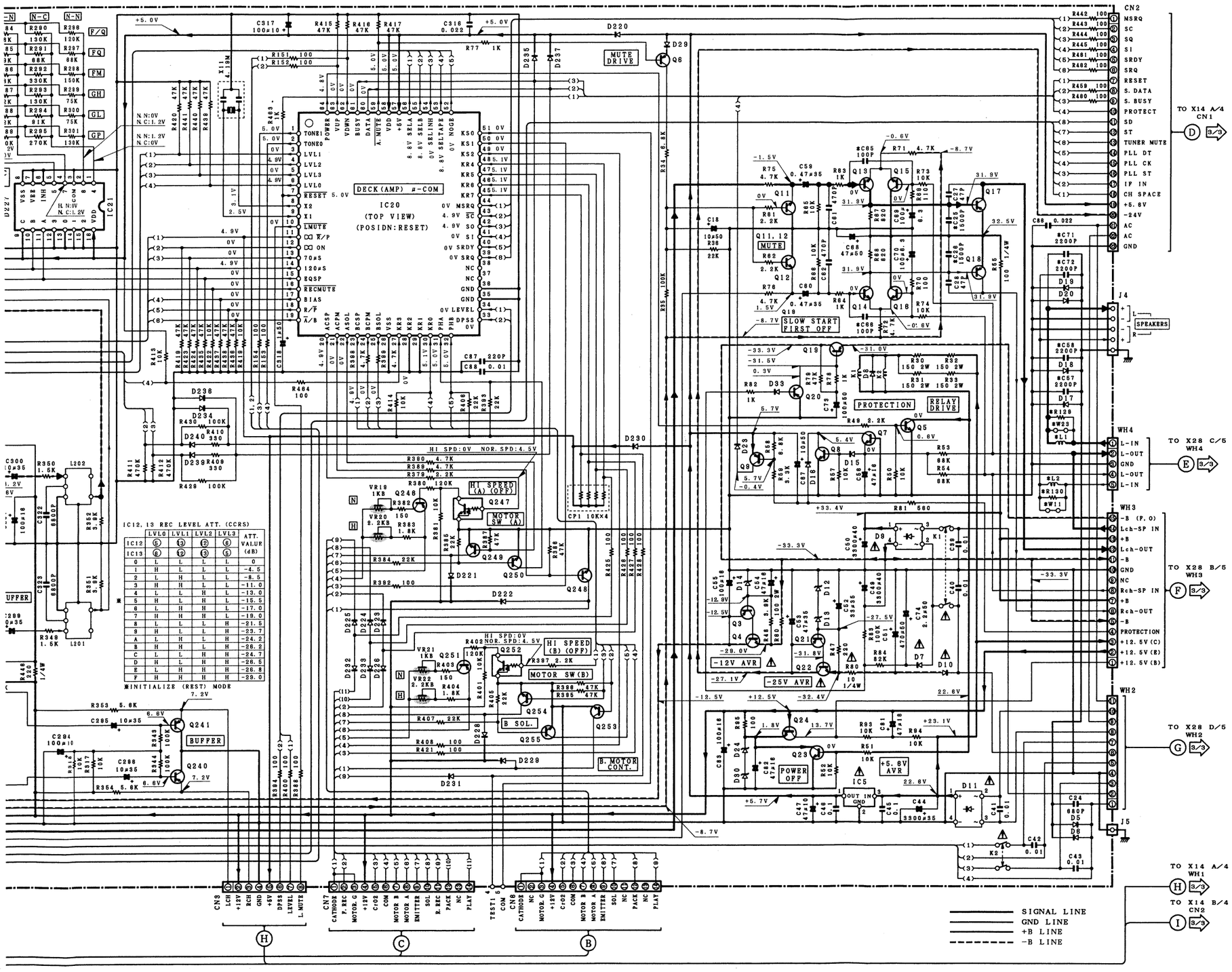
CONTROL 1~4	'ON, CHANNEL BETWEEN
⑤, ⑥, ⑫, ⑭ PIN	① - ②, ③ - ④, ⑧ - ⑨, ⑩ - ⑪
H	ON
L	OFF

IC4 TAPE/SOURCE SELECTOR

IC12, 13 TRUTH TABLE

LVS 0~3	'ON, CHANNEL BETW
⑤, ⑥, ⑫, ⑬ P IN	①-②, ③-④, ⑥-⑦
H	ON
L	OFF


IC20
DECK (AMP) μ-COM
(TOP VIEW)
(POSI DN: RESET)
IC21
IC15
IC16
IC12, 13 REC LEVEL ATT. (CCRS)
IC4
TAPE/SOURCE SELECTOR
IC3
BUFFER
INVERTER
REC LEVEL ATT.
INITIALIZE (RESET) MODE
MUTE DRIVE
MOTOR SW (A)
MOTOR SW (B)
HI SPEED (A) (OFF)
HI SPEED (B) (OFF)
A MOTOR CONT.
B MOTOR CONT.
A SOL.
B SOL.
REC MUTE
REC EQ.
REC AMP.
DOLBY NR
A PLAY (ON)
B PLAY (ON)
REC:ON DUB:OFF PLAY:OFF
REC:OFF
REC:ON
BIAS ON (OFF)
BIAS ON (ON)
NORMAL (ON)
SLOW START FIRST OFF
POWER OFF
-12V AVR
-25V AVR
INPUT SELECTOR
CN1
CN3
CN5
CN6
CN7
CN8
CN9
CPI 16X4
TRUTH TABLE
ON CHANNEL BETWEEN
LVS 0~3
TAPE
SOURCE
PLAY
REC OUT
PB OUT
PB IN
REC IN
R/P
ON/OFF
DOLBY NR
VOL UP
VOL DOWN
TONE0
TONE1
+8.8V
-8.8V
+12V (U)
GND (U)
LCH IN
RCH IN
LCH OUT
RCH OUT
GND (S)
CH SPACE
T. MUTE
PLL DT
PLL CK
PLL ST
IF IN
SD
ST
LCH
RCH
GND
+12V
-12V
10V HOT
10V COLD
16V HOT
16V COLD



X28-256X-xx

IC1	:NJM4565D-D
IC2	:XRU4052B
IC3	:NJM4565D
IC4, 12, 13	:HD14066BP
IC5	:TA78057S
IC14	:LA3246
IC15	:HA12136A
IC16	:CXA1198AP
IC17	:µPC1330HA
IC20	:µPD5112GF-E43
IC21	:XRU4051B
Q1, 2, 220, 232	:DTA124ESorRN2203
Q3, 8, 9, 20, 21, 240~243, 246, 251	:2SA1175 (F, E) or 2SA933S (Q, R)
Q4, 22	:2SD2012
Q5, 248, 249 253, 254	:2SC3246 (H, J)
Q7, 8, 13~18, 23 24, 201~208, 217 250, 255	:2SC2785 (F, E) or 2SC1740S (Q, R)
Q11, 12, 218, 219	:2SD1302 (S, T)
Q17, 18, 239	:2SA992 (F, E)
Q19	:2SA954 (L, K)
Q209~212, 215, 216	:DTC143TSorRN1210
Q213, 214, 229~231, 247, 252	:DTC124ESorRN1203
Q234~236	:2SC2003 (L, K)
Q237, 238	:2SC1845 (F, E)
D1~6, 15~20, 23, 28 205, 207, 220 223~227, 230~240	:HSS104or1SS133
D7, 8, 221 222, 228, 229	:HSS104Aor1SS131
D9	:D3SBA20F03
D10, 29	:S5688B
D11	:KBP02ML-6127
D12~14	:HZS13N (B2) orRD13ES (B2)
D24, 204	:HZS5.1N (B2) or RD5.1ES (B2)
D26, 27, 206	:HZS8.2N (B2) or RD8.2ES (B2)
D30	:HZS6.8N (B2) or RD6.8ES (B2)

	K, P	M, Y, I	E, X, T
C1, 2, 25, 26, 93~98 57, 58, 85, 86 71, 72, 78, 80	NO	NO	YES
L1, 2 R129, 130	NO	NO	YES
W11, 23	YES	YES	NO

DC voltages are as measured with a high impedance voltmeter with a cassette loaded at playback mode. Values may vary slightly due to variations between individual instruments or/and units. Bias circuit DC voltages are as measured while in the record mode.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance, une cassette étant insérée en mode du lecture. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
Les tensions c.c. du circuit de polarité doivent être mesurées, l'appareil étant en mode d'enregistrement.

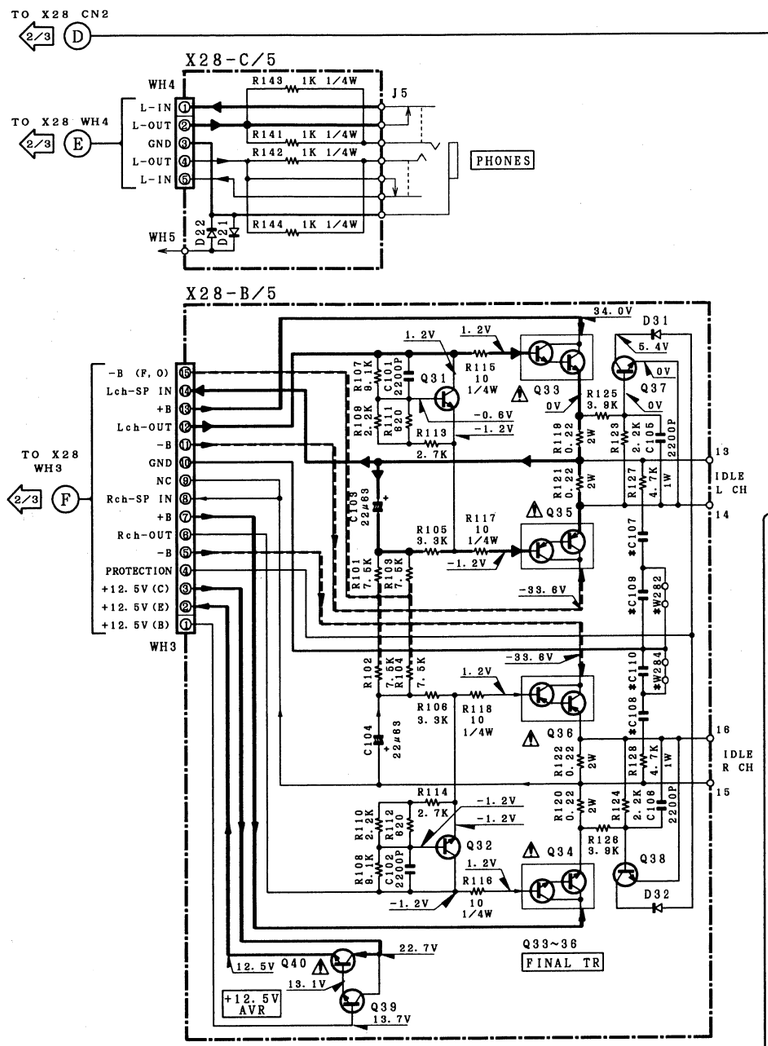
Die angegebenen Gleichspannungswerte wurden bei eingesetzter Cassette in der Wiedergabe mit einem hochomigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig. Die angegebenen Gleichspannungswerte der Vormagnetisierungsschaltung wurden in der Aufnahme-Betriebsart gemessen.

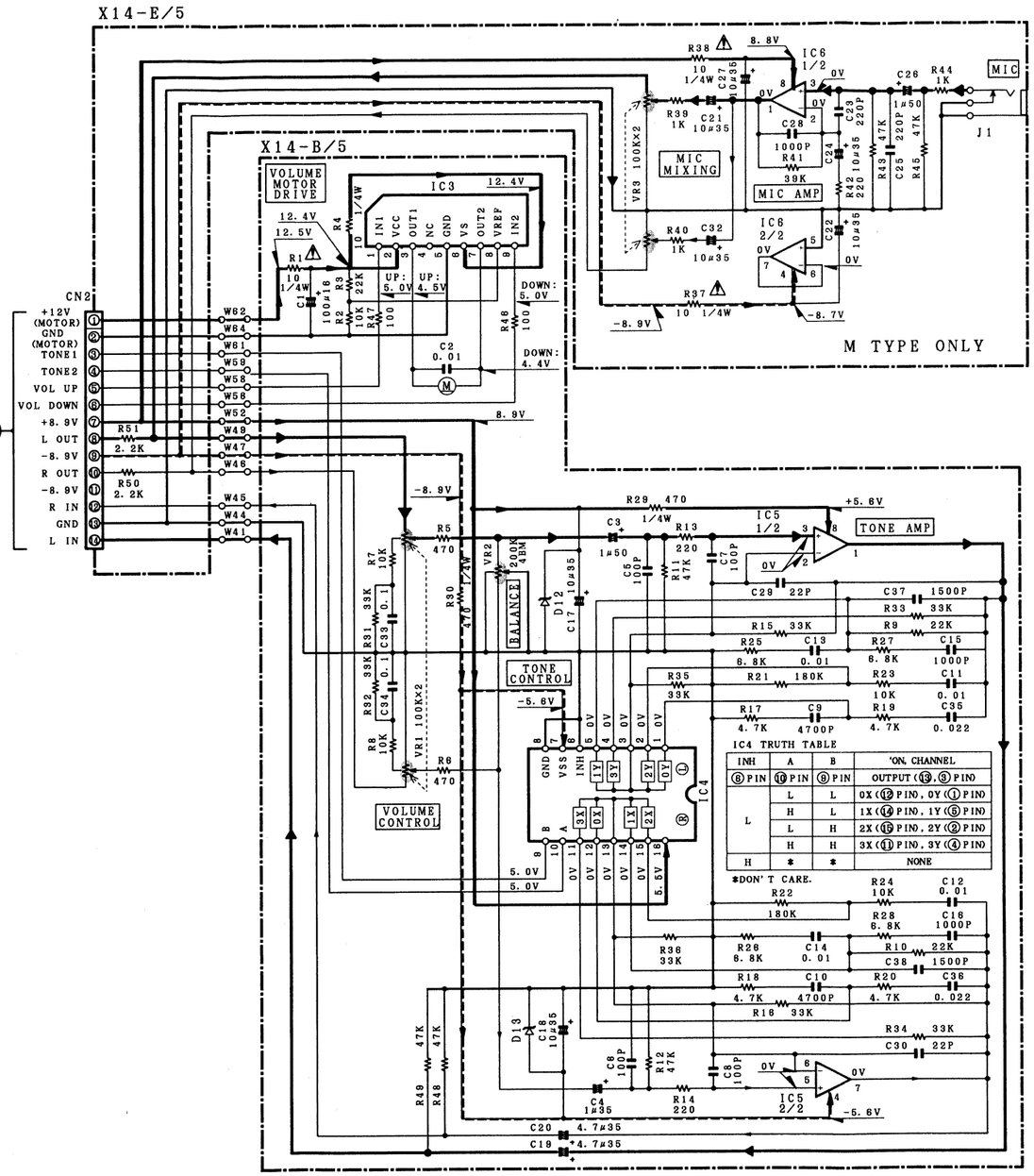
CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list) ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

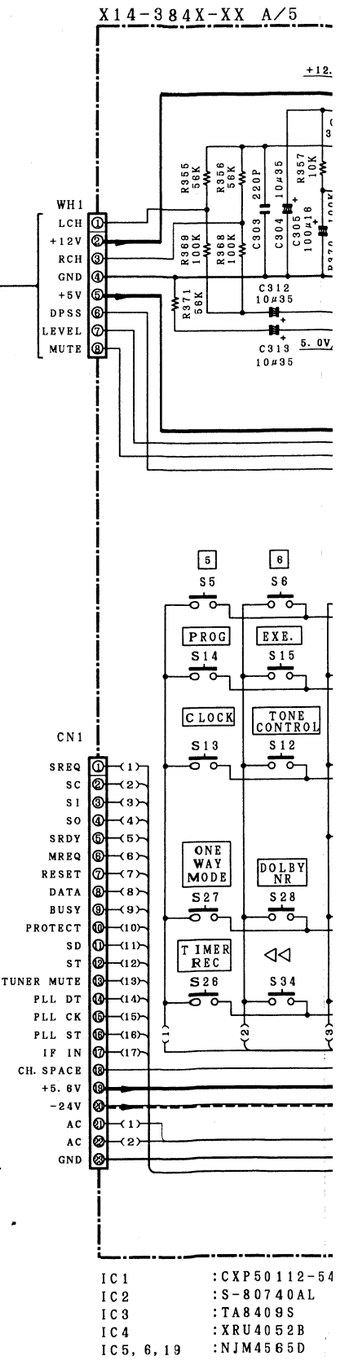
RX-28

KENWOOD

Y09-4320-10







TO X28 WH2 (G)
TO X28 WH1 (H)
TO X28 CN1 (I)

X28-C/5
D21, 22 :HSS104or1SS133

X28-B/5
D31, 32 :HSS104or1SS133
Q31, 32 :2SC4137(V, W)
Q33, 34 :2SD2340
Q35, 36 :2SB1531
Q37, 38, 39 :2SC2785(F, E) or 2SC1740S(Q, R)
Q40 :2SD2012

IC1 :CXP50112-54
IC2 :S-80740AL
IC3 :TA8409S
IC4 :XRU4052B
IC5, 6, 19 :NJM4565D

X14-384X-XX A/5

M TYPE ONLY

IC4 TRUTH TABLE

INH	A	B	'ON' CHANNEL
⑥ PIN	⑩ PIN	⑨ PIN	OUTPUT (⑬, ⑨ PIN)
L	L	L	0X (⑫ PIN), 0Y (① PIN)
	H	L	1X (⑭ PIN), 1Y (⑤ PIN)
	L	H	2X (⑮ PIN), 2Y (② PIN)
	H	H	3X (① PIN), 3Y (④ PIN)
H	*	*	NONE

*DON'T CARE.

IC1 :CXP50112-544Q
IC2 :S-80740AL
IC3 :TA8409S
IC4 :XRU4052B
IC5, 6, 19 :NJM4565D

ED1 :9-BT-129GK
A1 :W02-1153-03
Q1, 244 :2SC1740S(Q, P) or 2SC2785(F, E)
Q245 :2SA933S(Q, R) or 2SA1175(F, E)

D1~3, 7, 8, 11, 209, 210, 212~219 :HSS104 or 1SS133
D9 :B30-1290-05
D10, 12, 13 :RD5.6ES(B2) or HZS5.6N(B2)
D211 :RD5.1ES(B2) or HZS5.1N(B2)

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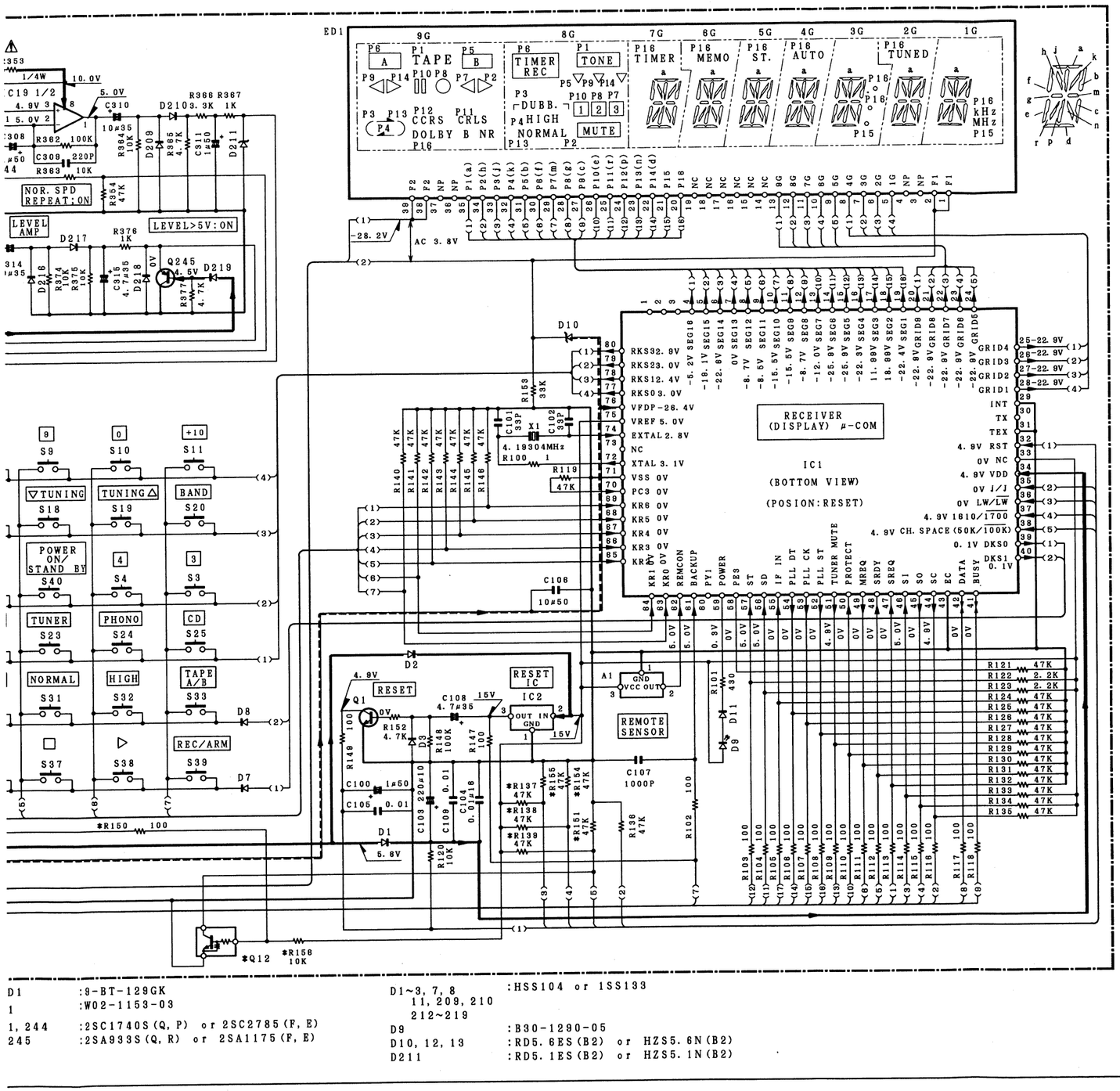
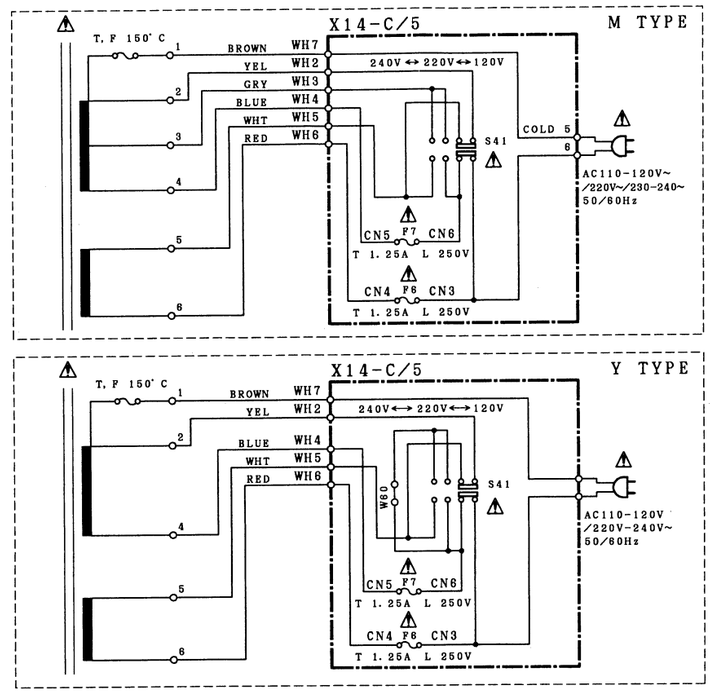
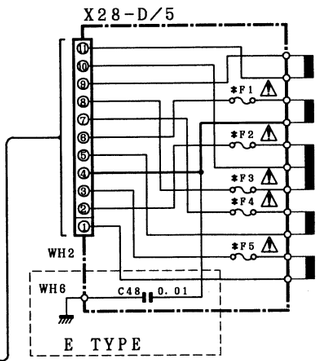
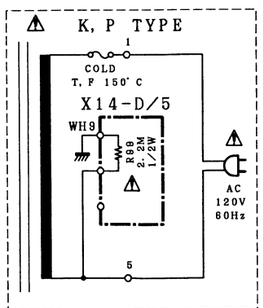


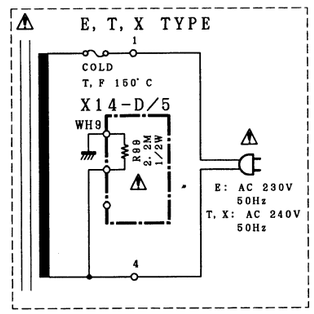
	K	M	E	X	Y
	0-10	0-21	2-71	0-71	2-91
S41	NO	S31-2322-05	NO	NO	S62-0001-05
X14 E/5	NO	YES	NO	NO	NO
Q2	NO	YES	NO	NO	YES
R99	YES	NO	NO	NO	NO
R139	NO	YES	YES	YES	YES
R137	YES	NO	YES	NO	NO
R138	NO	YES	YES	YES	YES
R150	NO	YES	NO	NO	YES
R151	YES	NO	NO	NO	NO
R154	YES	NO	NO	NO	NO
R155	NO	YES	NO	YES	YES
R156	NO	YES	NO	NO	YES
W42, 63	NO	YES	NO	NO	NO

	K 0-10	M 0-21	E 2-71
C48	NO	NO	YES
C107, 108	0.047	0.047	0.1
C109, 110	NO	NO	0.1
W282, 284	YES	YES	NO
WH6	NO	NO	YES
F1, 2	5A 125V	T4AL 250V	T4AL 250V
F3	2A 250V	T1.6AL 250V	T1.6AL 250V
F4, 5	2.5A 250V	T2.5AL 250V	T2.5AL 250V









D1	:9-BT-129GK	D1~3, 7, 8 11, 209, 210 212~219	:HSS104 or 1SS133
1	:W02-1153-03	D9	:B30-1290-05
1, 244	:2SC1740S(Q, P) or 2SC2785(F, E)	D10, 12, 13	:RD5.6ES(B2) or HZS5.6N(B2)
245	:2SA933S(Q, R) or 2SA1175(F, E)	D211	:RD5.1ES(B2) or HZS5.1N(B2)

DC voltages are as measured with a high impedance voltmeter with a cassette loaded at playback mode. Values may vary slightly due to variations between individual instruments or/and units. Bias circuit DC voltages are as measured while in the record mode.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance, une cassette étant insérée en mode du lecture. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
Les tensions c.c. du circuit de polarité doivent être mesurées, l'appareil étant en mode d'enregistrement.

Die angegebenen Gleichspannungswerte wurden bei eingesetzter Cassette in der Wiedergabe mit einem hochomigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig. Die angegebenen Gleichspannungswerte der Vormagnetisierungsschaltung wurden in der Aufnahme-Betriebsart gemessen.

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list) ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is retumed to the customer.

SIGNAL LINE
GND LINE
+B LINE
-B LINE

3/3

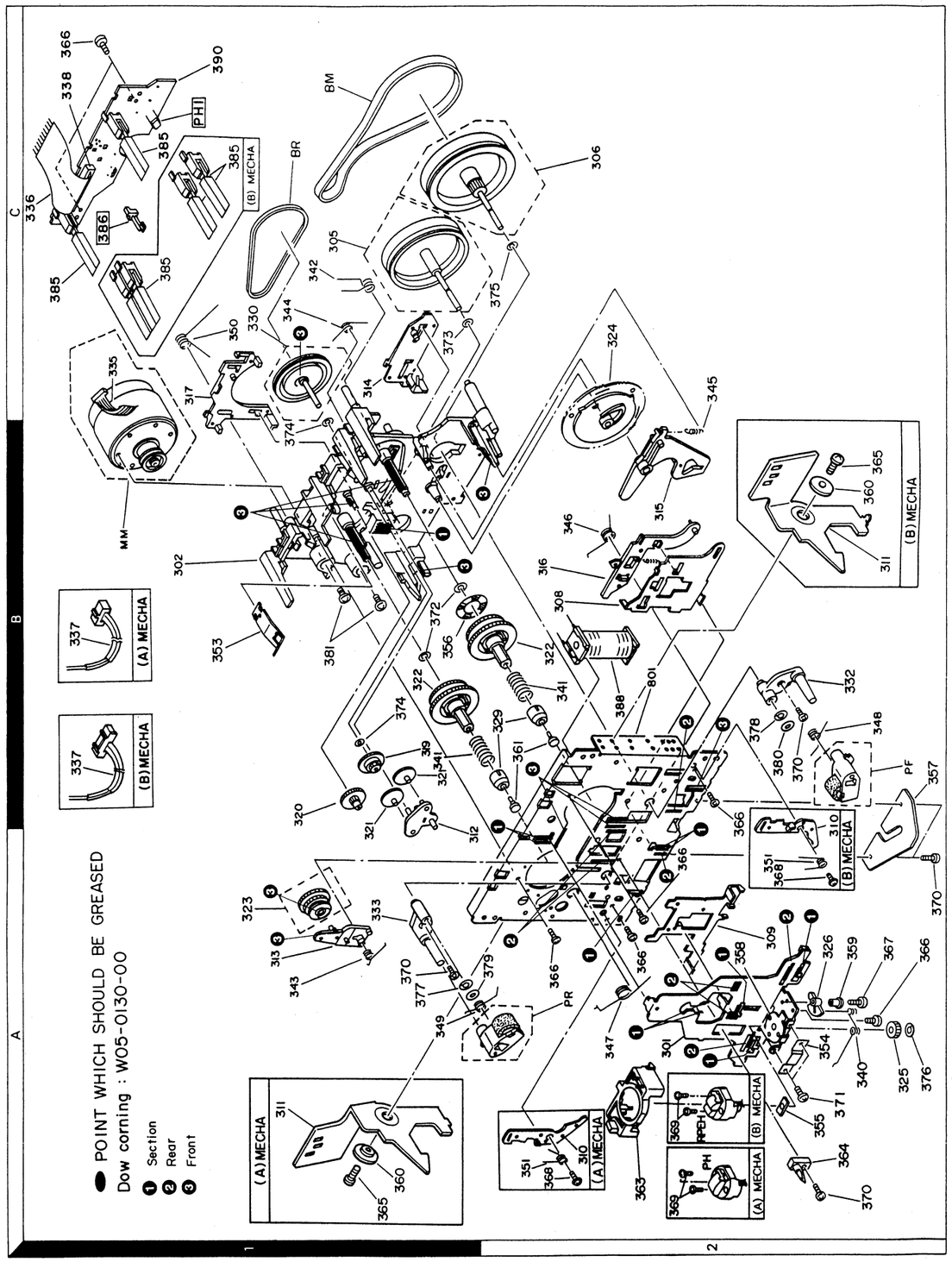
Y09-4320-10

RX-28

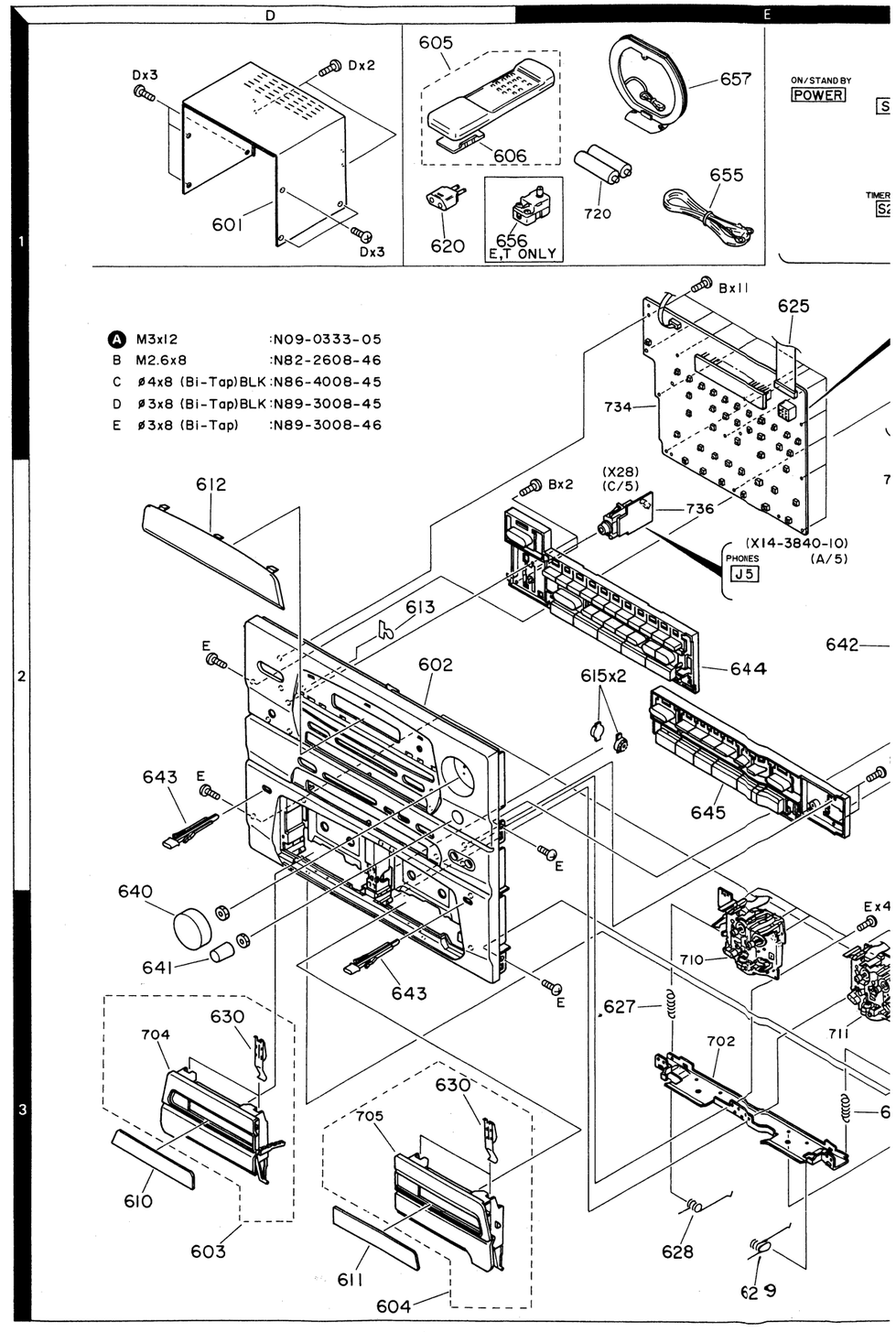
KENWOOD

RX-28

EXPLODED VIEW (MECHANISM)



Parts with the exploded numbers larger than 700 are not supplied.



RX-28

RX-2

EXPLODED VIEW (UNIT)

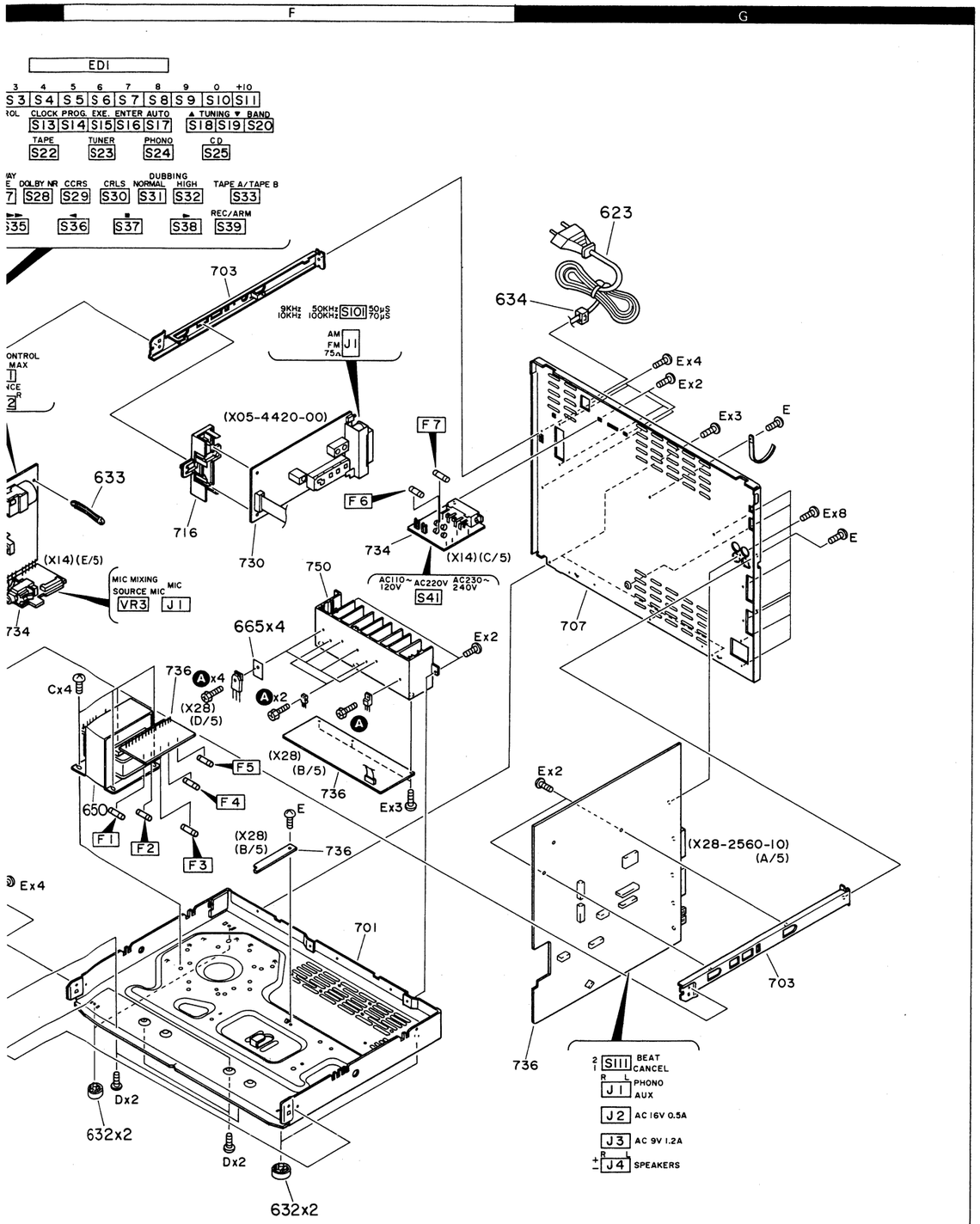
Parts with the exploded numbers larger than 700 are not supplied.

UNIT

No.1

* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

ODED VIEW (UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

UNIT LIST

Distination		TUNER UNIT	RECORD/PLAYBACK AMP UINT	DISPLAY UNIT
Singapore made	E	X05-4472-70	X28-2562-71	X14-3842-71
Malaysia made	K	X05-4460-11	X28-2560-10	X14-3840-10
	P	X05-4460-11	X28-2560-10	X14-3840-10
	E	X05-4472-70	X28-2562-71	X14-3842-71
	T	X05-4472-70	X28-2562-71	X14-3842-71
	X	X05-4460-71	X28-2562-71	X14-3840-71
	M	X05-4460-21	X28-2560-71	X14-3840-21
	Y	X05-4460-21	X28-2560-21	X14-3842-91
	I	X05-4460-21	X28-2560-21	X14-3840-21

No.1

RX-28 (UNIT)

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
601	1D	*	A01-3073-11	METALLIC CABINET	KPETXY	
602	2D	*	A60-0511-11	PANEL	MI	A
603	3D	*	A53-1450-13	CASSETTE HOLDER ASSY		B
604	3D	*	A53-1451-13	CASSETTE HOLDER ASSY		
605	1D	*	A70-0956-05	REMOTE CONTROLLER ASSY	K	
606	1D		A09-0146-08	BATTERY COVER		
610	3D	*	B03-2882-03	DRESSING PLATE CASSETTE HOLDER		A
611	3D	*	B03-2883-03	DRESSING PLATE CASSETTE HOLDER		B
612	2D	*	B10-2005-03	FRONT GLASS	KP	
613	2D	*	B11-0273-04	SMOKED FILTER	X	
-			B46-0092-33	WARRANTY CARD		
-			B46-0094-03	WARRANTY CARD	Y	
-			B46-0095-03	WARRANTY CARD	Y	
-			B46-0096-33	WARRANTY CARD	X	
-			B46-0121-33	WARRANTY CARD	P	
-			B46-0197-00	QUESTIONAIRE CARD	K	
-			B46-0310-03	WARRANTY CARD (PRESET220-240)	ET	
-			B58-0513-04	CAUTION CARD	Y	
-		*	B46-1335-00	INSTRUCTION MANUAL (ENGLISH)	T	
-		*	B60-1336-00	INSTRUCTION MANUAL (FRENCH)	PE	
-		*	B60-1337-00	INSTRUCTION MANUAL (CHINESE)	MI	
-		*	B60-1338-00	INSTRUCTION MANUAL (GER.DUT)	E	
-		*	B60-1416-00	INSTRUCTION MANUAL (SPANISH)	EM	
-		*	B60-1417-00	INSTRUCTION MANUAL (ITALIANO)	E	
615	2E		D39-0176-05	DAMPER		
620	1D		E03-0115-05	AC PLUG ADAPTER	MI	
623	1G		E30-0459-05	AC POWER CORD	EMI	
623	1G		E30-0812-05	AC POWER CORD	Y	
623	1G		E30-2209-05	AC POWER CORD	KP	
623	1G		E30-2714-05	AC POWER CORD	X	
623	1G		E30-2718-05	AC POWER CORD X14(CN1)-X28(CN2)	T	
625	1E		E35-0574-05	FLAT CABLE		
627	3E		G01-3405-04	EXTENSION SPRING		A
628	3E		G01-3406-04	TORSION COIL SPRING		B
629	3E		G01-3407-04	TORSION COIL SPRING		
630	3D		G02-1001-24	FLAT SPRING		
-		*	H50-0813-04	ITEM CARTON CASE	KPEY	
-		*	H50-0895-04	ITEM CARTON CASE	TX	
-		*	H50-0896-04	ITEM CARTON CASE	MI	
-		*	H50-1871-04	ITEM CARTON CASE	E	
-		*	H10-5619-12	POLYSTYRENE FOAMED FIXTURE	KPEMXI	S
-		*	H10-5620-12	POLYSTYRENE FOAMED FIXTURE	KPEMYI	
-		*	H10-5621-12	POLYSTYRENE FOAMED FIXTURE	TX	
-		*	H10-5622-12	POLYSTYRENE FOAMED FIXTURE	TX	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	KPXMYI	
-			H25-0632-24	PROTECTION BAG	E	
-		*	H25-0651-04	PROTECTION BAG (0232 PRINTED)	T	
-		*	H25-1508-04	PROTECTION BAG	KPETXY	
-		*	H25-1509-04	PROTECTION BAG	MI	

* New Parts
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Teile ohne Parts No. werden nicht geliefert.

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
Y:AAFES(Europe) M:Other Areas

A : A DECK S : Singapore made
B : B DECK

⚠ indicates safety critical components.

× New Parts
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Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Telle ohne Parts No. werden nicht geliefert.

No.2

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
632	3F		J02-0366-15	FOOT		
633	2F	*	J19-3632-05	UNIT HOLDER		
634	1G		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND		
640	3D	*	K29-5808-04	KNOB VOLUME		
641	3D	*	K29-5809-04	KNOB BALANCE		
642	2E	*	K29-5810-04	KNOB MIC	MI	
643	2D,3D	*	K29-5811-04	KNOB EJECT		
644	2E	*	K29-5812-02	KNOB INPUT SELECTOR		
645	2E	*	K29-5813-02	KNOB DECK CONTROL		
650	2F	*	L07-0804-05	POWER TRANSFORMER	KP	
650	2F	*	L07-0805-05	POWER TRANSFORMER	E	
650	2F	*	L07-0806-05	POWER TRANSFORMER	TX	
650	2F	*	L07-0807-05	POWER TRANSFORMER	MI	
650	2F	*	L07-0808-05	POWER TRANSFORMER	Y	
B	1E,2E		N82-2606-46	BINDING HEAD TAPTITE SCREW		
C	2F		N86-4008-45	BINDING HEAD TAPTITE SCREW		
D	1D,2D		N89-3008-45	BINDING HEAD TAPTITE SCREW		
E	3E,3F		N89-3008-46	BINDING HEAD TAPTITE SCREW		
655	1E		T90-0175-05	T TYPE ANTENNA		
656	1D		T90-0185-05	ANTENNA ADAPTOR	ET	
657	1E	*	T90-0195-05	LOOP ANTENNA		
TUNER UNIT(X05-4460-XX)						
C1 ,2			CK73FB1H103K	CHIP C 0.010UF K	KPXMYI	
C4			CE04LW1A470M	ELECTRO 47UF 10WV	KPXMYI	
C5			CK73FB1H103K	CHIP C 0.010UF K	KPXMYI	
C8			CK73FB1H103K	CHIP C 0.010UF K	KPXMYI	
C10			CK73FB1H122K	CHIP C 1200PF K	KPXMYI	
C11			CE04LW1H4R7M	ELECTRO 4.7UF 50WV	KPXMYI	
C13			CE04LW1H010M	ELECTRO 1.0UF 50WV	KPXMYI	
C14			CE04LW1H2R2M	ELECTRO 2.2UF 50WV	KPXMYI	
C21 ,22			CF92FV1H163J	MF 0.016UF J	XMYI	
C21 ,22			CF92FV1H243J	MF 0.024UF J	KP	
C23			CE04LW1H010M	ELECTRO 1.0UF 50WV	KPXMYI	
C24			CE04LW1H3R3M	ELECTRO 3.3UF 50WV	KPXMYI	
C25			CE04LW1V100M	ELECTRO 10UF 35WV	KPXMYI	
C27			CK73FB1E473K	CHIP C 0.047UF K	KPXMYI	
C28			CE04LW1V100M	ELECTRO 10UF 35WV	KPXMYI	
C31			CE04LW1A470M	ELECTRO 47UF 10WV	KPXMYI	
C32			CK73FB1H103K	CHIP C 0.010UF K	KPXMYI	
C33			CC73FCH1H270J	CHIP C 27PF J	KPXMYI	
C34			CC73FCH1H220J	CHIP C 22PF J	KPXMYI	
C35 -38			CK73FB1H471K	CHIP C 470PF K	KPXMYI	
C39			CE04LW1C470M	ELECTRO 47UF 16WV	KPXMYI	
C40			CK73FB1H223K	CHIP C 0.022UF K	KPXMYI	
C41			CE04LW1H010M	ELECTRO 1.0UF 50WV	KPXMYI	
C42 ,43			CK73FB1H103K	CHIP C 0.010UF K	KPXMYI	
C50			C91-0769-05	CERAMIC 0.01UF K	KPXMYI	
C51			CE04LW1H010M	ELECTRO 1.0UF 50WV	KPXMYI	
C52			CE04LW1C470M	ELECTRO 47UF 16WV	KPXMYI	
C57			CC73FSL1H220J	CHIP C 22PF J	KPXMYI	
C65			CE04LW1H010M	ELECTRO 1.0UF 50WV	KPXMYI	
C66			CK73FB1H102K	CHIP C 1000PF K	KPXMYI	

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
Y:AAFES(Europe) X:Australia M,I:Other Areas

⚠ indicates safety critical components.

× New Parts
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Telle ohne Parts No. werden nicht geliefert.

No.3

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C71			CE04LW1V100M	ELECTRO 10UF 35WV	KPXMYI	
C72			CE04LW1C470M	ELECTRO 47UF 16WV	KPXMYI	
C103-106			CE04LW1HR47M	ELECTRO 0.47UF 50WV	KPXMYI	
C107			CK73FB1E473K	CHIP C 0.047UF K	KPXMYI	
C112			CC73FSL1H101J	CHIP C 100PF J	KPXMYI	
C114			CK73FB1H681K	CHIP C 680PF K	KPXMYI	
C115,116			CC73FSL1H101J	CHIP C 100PF J	KPXMYI	
C121,122			CE04LW1C470M	ELECTRO 47UF 16WV	KPXMYI	
C135,136			CF92FV1H682J	MF 6800PF J	MYI	
C182			CC73FSL1H150J	CHIP C 15PF J	KPXMYI	
J1			E20-0476-05	LOCK TERMINAL BOARD ANTENNA	KPXMYI	
CF1 ,2			L72-0531-05	CERAMIC FILTER	KPXMYI	
CF3			L72-0574-05	CERAMIC FILTER	KPXMYI	
L7			L30-0467-05	AM IFT	KPXMYI	
L10			L40-1091-17	SMALL FIXED INDUCTOR(1UH)	KPXMYI	
L11			L40-1021-14	SMALL FIXED INDUCTOR(1.0MH.K)	KPXMYI	
L12			L40-1091-17	SMALL FIXED INDUCTOR(1UH)	KPXMYI	
L103			L39-1309-05	COMBINATION COIL	KPXMYI	
L106			L40-1091-17	SMALL FIXED INDUCTOR(1UH)	KPXMYI	
X1			L77-1122-05	CRYSTAL RESONATOR(7.2MHZ)	KPXMYI	
X2			L78-0295-05	RESONATOR (19KHZ)	KPXMYI	
R11			RS14KB3A820J	FL-PROOF RS 82 J 1W	KPXMYI	
R31			RS14KB3D221J	FL-PROOF RS 220 J 2W	KPXMYI	
R42			RD14NB2E101J	RD 100 J 1/4W	KPXMYI	
R111			RD14NB2E470J	RD 47 J 1/4W	KPXMYI	
R127,128			RD14NB2E101J	RD 100 J 1/4W	KPXMYI	
W46			R92-0670-05	CHIP R 0 OHM	KPXMYI	
W48			R92-0670-05	CHIP R 0 OHM	KPXMYI	
S101			S62-0034-05	SLIDE SWITCH CH SPACE	MYI	
D3			HZS5.1N(B2)	ZENER DIODE	KPXMYI	
D3			RD5.1ES(B2)	ZENER DIODE	KPXMYI	
D4			HZS3.3N(B2)	ZENER DIODE	KPXMYI	
D4			RD3.3ES(B2)	ZENER DIODE	KPXMYI	
D7			MA110	DIODE	KPXMYI	
D8 ,9			HSS104	DIODE	KPXMYI	
D8 ,9			1SS133	DIODE	KPXMYI	
D11			HZS8.2N(B2)	ZENER DIODE	KPXMYI	
D11			RD8.2ES(B2)	ZENER DIODE	KPXMYI	
D111,112			MA110	DIODE	KPXMYI	
IC1			LA1831-KEN	IC(AM/FM TUNER)	KPXMYI	
IC2			LC7218	IC(PLL SYNTHESIZER)	KPXMYI	
IC12			NJM4565D	IC(OP AMP X2)	KPXMYI	
Q1			2SC2714(R,O)	TRANSISTOR	KPXMYI	
Q2			2SC1845(F,E)	TRANSISTOR	KPXMYI	
Q3			2SC1740S(Q,R)	TRANSISTOR	KPXMYI	
Q3			2SC2785(F,E)	TRANSISTOR	KPXMYI	
Q7			2SC2412K	TRANSISTOR	KPXMYI	
Q11			2SD863(E,F)	TRANSISTOR	KPXMYI	
Q102			2SA1037K	TRANSISTOR	KPXMYI	
Q104			2SA1037K	TRANSISTOR	KPXMYI	
Q107-110			2SC2412K	TRANSISTOR	MYI	
Q109,110			2SC2412K	TRANSISTOR	KPX	
Q111			2SA1037K	TRANSISTOR	KPXMYI	

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
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⚠ indicates safety critical components.

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Teile ohne Parts No. werden nicht geliefert.

No.4

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
DT1			W02-1167-05	FM FRONT-END ASSY	KPXMYI	
TUNER UNIT (X05-4472-70)						
C1 ,2			CK73FB1H103K	CHIP C 0.010UF K	ET	
C4			CE04LW1C470M	ELECTRO 47UF 16WV	ET	
C5			CK73FB1H223K	CHIP C 0.022UF K	ET	
C6			CK73FB1E473K	CHIP C 0.047UF K	ET	
C7			CE04LW1H3R3M	ELECTRO 3.3UF 50WV	ET	
C8			CK73FB1H682K	CHIP C 6800PF K	ET	
C9			CK73FB1H103K	CHIP C 0.010UF K	ET	
C10			CC73FSL1H330J	CHIP C 33PF J	ET	
C11			CE04LW1V100M	ELECTRO 10UF 35WV	ET	
C12			CE04LW1H010M	ELECTRO 1.0UF 50WV	ET	
C13			CE04LW1HR33M	ELECTRO 0.33UF 50WV	ET	
C14			CE04LW1H010M	ELECTRO 1.0UF 50WV	ET	
C15			CK73FB1H103K	CHIP C 0.010UF K	ET	
C16			C91-0769-05	CERAMIC 0.01UF K	ET	
C17			CK73FB1H223K	CHIP C 0.022UF K	ET	
C21 ,22			CK73FB1H682K	CHIP C 6800PF K	ET	
C23			CE04LW1V100M	ELECTRO 10UF 35WV	ET	
C25			CE04LW1V100M	ELECTRO 10UF 35WV	ET	
C27			CE04LW1V100M	ELECTRO 10UF 35WV	ET	
C28			CK73FB1E473K	CHIP C 0.047UF K	ET	
C31			CE04LW1A470M	ELECTRO 47UF 10WV	ET	
C32			CK73FB1H103K	CHIP C 0.010UF K	ET	
C33			CC73FCH1H270J	CHIP C 27PF J	ET	
C34			CC73FCH1H220J	CHIP C 22PF J	ET	
C35 -38			CK73FB1H471K	CHIP C 470PF K	ET	
C39			CE04LW1C470M	ELECTRO 47UF 16WV	ET	
C40			CQ92FM1H223J	MYLAR 0.022UF J	ET	
C41			CE04HW1H2R2M	NP-ELEC 2.2UF 50WV	ET	
C42 ,43			CK73FB1H103K	CHIP C 0.010UF K	ET	
C45 ,46			CE04LW1V100M	ELECTRO 10UF 35WV	ET	
C47 ,48			CE04LW1H0R1M	ELECTRO 0.1UF 50WV	ET	
C50			C91-0769-05	CERAMIC 0.01UF K	ET	
C51			CE04LW1H010M	ELECTRO 1.0UF 50WV	ET	
C52			CE04LW1C470M	ELECTRO 47UF 16WV	ET	
C56			CC45FSL1H220J	CERAMIC 22PF J	ET	
C58 ,59			CK73FB1H472K	CHIP C 4700PF K	ET	
C65			CE04LW1H010M	ELECTRO 1.0UF 50WV	ET	
C66			C91-0769-05	CERAMIC 0.01UF K	ET	
C72			CE04LW1C470M	ELECTRO 47UF 16WV	ET	
C107			CK73FB1E473K	CHIP C 0.047UF K	ET	
C121,122			CE04LW1C470M	ELECTRO 47UF 16WV	ET	
C182			CC73FSL1H150J	CHIP C 15PF J	ET	
J1			E20-0321-05	LOCK TERMINAL BOARD ANTENNA	ET	
CF1 ,2			L72-0536-05	CERAMIC FILTER	ET	
L1 ,2			L40-1091-17	SMALL FIXED INDUCTOR(1UH)	ET	
L3			L30-0496-05	FM IFT	ET	
L4			L30-0497-05	FM IFT	ET	
L5			L79-0125-05	LC FILTER	ET	
L7			L30-0467-05	AM IFT	ET	
L8 ,9			L79-0790-05	LC FILTER	ET	
L10			L40-1091-17	SMALL FIXED INDUCTOR(1UH)	ET	

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No.5

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
L103		*	L39-1325-05	COMBINATION COIL	ET	
L106			L40-1091-17	SMALL FIXED INDUCTOR(1UH)	ET	
X1			L77-1122-05	CRYSTAL RESONATOR(7.2MHZ)	ET	
X2			L78-0295-05	RESONATOR (19KHZ)	ET	
R31			RS14KB3D221J	FL-PROOF RS 220 J 2W	ET	
R42			RD14NB2E101J	RD 100 J 1/4W	ET	
R111			RD14NB2E470J	RD 47 J 1/4W	ET	
R127,128			RD14NB2E101J	RD 100 J 1/4W	ET	
VR1			R12-3686-05	TRIMMING POT.(22K) FM ADJ	ET	
VR2			R12-3685-05	TRIMMING POT.(10K) AM ADJ	ET	
VR3			R12-1619-05	TRIMMING POT.(4.7K) SEPARATION	ET	
W101-103			R92-0670-05	CHIP R 0 OHM	ET	
W200-207			R92-0679-05	CHIP R 0 OHM	ET	
W211			R92-0679-05	CHIP R 0 OHM	ET	
D3			HZS5.1N(B2)	ZENER DIODE	ET	
D3			RD5.1ES(B2)	ZENER DIODE	ET	
D4			HZS3.3N(B2)	ZENER DIODE	ET	
D4			RD3.3ES(B2)	ZENER DIODE	ET	
D5			HSS104	DIODE	ET	
D5			1SS133	DIODE	ET	
D11			HZS8.2N(B2)	ZENER DIODE	ET	
D11			RD8.2ES(B2)	ZENER DIODE	ET	
D111,112			HSS104	DIODE	ET	
D111,112			1SS133	DIODE	ET	
IC1			LA1851N	IC(AM,FM TUNER)	ET	
IC2			LC7218	IC(PLL SYNTHESIZER)	ET	
IC3			NJM4565D	IC(OP AMP X2)	ET	
Q1			2SC2714(R,O)	TRANSISTOR	ET	
Q2			2SC1845(F,E)	TRANSISTOR	ET	
Q3 ,4			2SC2412K	TRANSISTOR	ET	
Q5			2SA1037K	TRANSISTOR	ET	
Q7			2SC2412K	TRANSISTOR	ET	
Q11			2SD863(E,F)	TRANSISTOR	ET	
Q102,103			2SA1037K	TRANSISTOR	ET	
Q109,110			2SC2412K	TRANSISTOR	ET	
Q111			2SA1037K	TRANSISTOR	ET	
Q113,114			2SC2412K	TRANSISTOR	ET	
Q116			2SC2412K	TRANSISTOR	ET	
DT1			W02-1166-05	FM FRONT-END ASSY	ET	
DISPLAY UNIT (X14-384X-XX)						
D9			B30-1290-05	LED(LN21RCALSLX(U)-(TA4))		
C1			CE04LW1C101M	ELECTRO 100UF 16WV		
C2			CK45FF1H103Z	CERAMIC 0.010UF Z		
C3 ,4			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C3 ,4		*	C90-3529-05	ELECTRO 1UF 35WV		
C5 -8			CC45FSL1H101J	CERAMIC 100PF J		
C9 ,10			CK45FF1H472Z	CERAMIC 4700PF Z		
C11 -14			CK45FF1H103Z	CERAMIC 0.010UF Z		
C15 ,16			CK45FB1H102K	CERAMIC 1000PF K		
C17 ,18			CE04LW1V100M	ELECTRO 10UF 35WV		
C19 ,20			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C19 ,20		*	C90-3533-05	ELECTRO 4.7UF 35WV		
C21			CE04LW1V100M	ELECTRO 10UF 35WV	MI	

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No.6

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名/規格			Destination 仕向	Remarks 備考
C21		*	C90-3530-05	ELECTRO	10UF	35WV	MI	
C22			CE04LW1V100M	ELECTRO	10UF	35WV	MI	
C23			CC45FSL1H221J	CERAMIC	220PF	J	MI	
C24			CE04LW1V100M	ELECTRO	10UF	35WV	MI	
C24		*	C90-3530-05	ELECTRO	10UF	35WV	MI	
C25			CC45FSL1H221J	CERAMIC	220PF	J	MI	
C26			CE04LW1H010M	ELECTRO	1.0UF	50WV	MI	
C26		*	C90-3529-05	ELECTRO	1UF	35WV	MI	
C27			CE04LW1V100M	ELECTRO	10UF	35WV	MI	
C28			C91-0757-05	CERAMIC	1000PF	K	MI	
C29 ,30			CC45FSL1H220J	CERAMIC	22PF	J		
C32			CE04LW1V100M	ELECTRO	10UF	35WV	MI	
C32		*	C90-3530-05	ELECTRO	10UF	35WV	MI	
C33 ,34			CQ92FM1H473J	MYLAR	0.047UF	J		
C35 ,36			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C37 ,38			CK45FB1H152K	CERAMIC	1500PF	K		
C100			C90-3253-05	ELECTRO	1UF	50WV		
C101,102			CC45FCH1H330J	CERAMIC	33PF	J		
C103			C90-3223-05	ELECTRO	220UF	10WV		
C104,105			C91-0769-05	CERAMIC	0.01UF	K		
C106			C90-3258-05	ELECTRO	10UF	50WV		
C107			C91-0757-05	CERAMIC	1000PF	K		
C108			C90-3242-05	ELECTRO	4.7UF	35WV		
C109			CF92FV1H103J	MF	0.010UF	J		
C303			CC45FSL1H221J	CERAMIC	220PF	J		
C304			C90-3244-05	ELECTRO	10UF	35WV		
C305			C90-3230-05	ELECTRO	100UF	16WV		
C306			CK45FB1H332K	CERAMIC	3300PF	K		
C307			CQ92FM1H104J	MYLAR	0.10UF	J		
C308			C90-3253-05	ELECTRO	1UF	50WV		
C309			CC45FSL1H221J	CERAMIC	220PF	J		
C310			CE04LW1V100M	ELECTRO	10UF	35WV		
C311			CE04LW1H010M	ELECTRO	1.0UF	50WV		
C312-314			C90-3244-05	ELECTRO	10UF	35WV		
C315			C90-3242-05	ELECTRO	4.7UF	35WV		
CN1	1E		E40-4203-05	FLAT CABLE CONNCTOR				
J1			E11-0205-05	PHONE JACK MIC INPUT			MI	
F6 ,7			F05-1222-05	FUSE (SEMKO) (250V T1.25A)			MYI	
CN3 -6			J13-0075-05	FUSE CLIP			MYI	
X1			L77-1175-05*	CRYSTAL RESONATOR(4.194304MHZ)				
R1			RD14NB2E100J	RD	10	J 1/4W		
R4			RD14NB2E100J	RD	10	J 1/4W		
R29 ,30			RD14NB2E471J	RD	470	J 1/4W		
R37 ,38			RD14NB2E100J	RD	10	J 1/4W	MI	
R99			R92-0173-05	RC	2.2M	M 1/2W	KP	
R353			RD14NB2E471J	RD	470	J 1/4W		
VR1		*	R29-5086-05	POTENTIOMETER(100KX2)		VOLUME		
VR2		*	R05-5059-05	POTENTIOMETER(200K)		BALANCE		
VR3		*	R10-5075-05	POTENTIOMETER(100KX2)		MIC MIX	MI	
S1 -40			S40-1064-05	PUSH SWITCH KEY BOARD				
S41			S31-2322-05	SLIDE SWITCH VOLTAGE SELECTOR			MI	
S41			S62-0001-05	SLIDE SWITCH VOLTAGE SELECTOR			Y	

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No.7

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名/規格			Destination 仕向	Remarks 備考
D1 -3			HSS104	DIODE				
D1 -3			1SS133	DIODE				
D7 ,8			HSS104	DIODE				
D7 ,8			1SS133	DIODE				
D10			HZS5.6N(B2)	ZENER DIODE				
D10			RD5.6ES(B2)	ZENER DIODE				
D11			HSS104	DIODE				
D11			1SS133	DIODE				
D12 ,13			HZS5.6N(B2)	ZENER DIODE				
D12 ,13			RD5.6ES(B2)	ZENER DIODE				
D209,210			HSS104	DIODE				
D209,210			1SS133	DIODE				
D211			HZS5.1N(B2)	ZENER DIODE				
D211			RD5.1ES(B2)	ZENER DIODE				
D212-219			HSS104	DIODE				
D212-219			1SS133	DIODE				
ED1		*	9-BT-129GK	INDICATOR TUBE				
IC1		*	CXP50112-544Q	IC				
IC2			S-80740AL	IC(VOLTAGE DETECTOR)				
IC3			TA8409S	IC(MOTOR CONTROL)				
IC4			XRU4052B	IC(MULTIPLEXER/DEMULTIPLEXER)				
IC5			NJM4565L	IC(OP AMP X2)			KPETXY	
IC5 ,6			NJM4565L	IC(OP AMP X2)			MI	
IC19			NJM4565L	IC(OP AMP X2)				
Q1			2SC1740S(Q,P)	TRANSISTOR				
Q1			2SC2785(F,E)	TRANSISTOR				
Q2			DTC124ES	DIGITAL TRANSISTOR			MYI	
Q2			UN4212	DIGITAL TRANSISTOR			MYI	
Q244			2SC1740S(Q,P)	TRANSISTOR				
Q244			2SC2785(F,E)	TRANSISTOR				
Q245			2SA1175(F,E)	TRANSISTOR				
Q245			2SA933S(Q,R)	TRANSISTOR				
A1			W02-1046-05	ELECTRIC CIRCUIT MODULE				
RECORD/PLAYBACK AMP UNIT (X28-256X-XX)								
C1 ,2			CC45FSL1H390J	CERAMIC	39PF	J	ETX	
C3 ,4			CE04LW1V100M	ELECTRO	10UF	35WV		
C3 ,4		*	C90-3530-05	ELECTRO	10UF	35WV		
C5 ,6			CC45FSL1H221J	CERAMIC	220PF	J		
C7 ,8			CE04LW1A101M	ELECTRO	100UF	10WV		
C7 ,8		*	C90-3532-05	ELECTRO	100UF	10WV		
C9 ,10			C91-0757-05	CERAMIC	1000PF	K		
C11 ,12			CQ92FM1H123J	MYLAR	0.012UF	J		
C13 ,14			CQ92FM1H332J	MYLAR	3300PF	J		
C15 ,16			CE04LW1V4R7M	ELECTRO	4.7UF	35WV		
C15 ,16		*	C90-3533-05	ELECTRO	4.7UF	35WV		
C17			CK45FB1H681K	CERAMIC	680PF	K		
C18			CE04LW1V100M	ELECTRO	10UF	35WV		
C18		*	C90-3530-05	ELECTRO	10UF	35WV		
C19 -22			CK45FB1H471K	CERAMIC	470PF	K		
C24			CK45FB1H681K	CERAMIC	680PF	K		
C25 ,26			CK45FB1H152K	CERAMIC	1500PF	K	ETX	
C27 ,28			CC45FSL1H470J	CERAMIC	47PF	J		
C29 ,30			CE04LW1HR47M	ELECTRO	0.47UF	50WV		
C31 ,32			CE04LW1V4R7M	ELECTRO	4.7UF	35WV		

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No.8

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格			Destination 仕向	Remarks 備考
C31 ,32		*	C90-3533-05	ELECTRO	4.7UF	35WV		
C33 -36			CC45FSL1H390J	CERAMIC	39PF	J	ETX	
C37 ,38			CE04LW1A470M	ELECTRO	47UF	10WV		
C39 -43			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C44			CE04LW1V332M	ELECTRO	3300UF	35WV		
C45 ,46			CQ92FM1H104J	MYLAR	0.10UF	J		
C47			CE04LW1A470M	ELECTRO	47UF	10WV		
C48			CK45FF1H103Z	CERAMIC	0.010UF	Z	ETX	
C49 ,50		*	C90-3539-05	ELECTRO	3300UF	40WV		
C51			CE04LW1H471M	ELECTRO	470UF	50WV		
C52			CE04LW1V330M	ELECTRO	33UF	35WV		
C53			CE04LW1V470M	ELECTRO	47UF	35WV		
C54			CE04LW1C470M	ELECTRO	47UF	16WV		
C55			CE04LW1C101M	ELECTRO	100UF	16WV		
C56			CE04LW1A470M	ELECTRO	47UF	10WV		
C57 ,58			CK45FB1H222K	CERAMIC	2200PF	K	ETX	
C59 ,60			CE04LW1HR47M	ELECTRO	0.47UF	50WV		
C61 ,62			CK45FB1H471K	CERAMIC	470PF	K		
C65 ,66			CC45FSL1H101J	CERAMIC	100PF	J	ETX	
C67			CE04LW1H100M	ELECTRO	10UF	50WV		
C68			CE04LW1H470M	ELECTRO	47UF	50WV		
C69 ,70			C90-1845-05	ELECTRO	100UF	6.3WV		
C71 ,72			CK45FB1H222K	CERAMIC	2200PF	K	ETX	
C73			CE04LW1H101M	ELECTRO	100UF	50WV		
C74			CE04LW1H2R2M	ELECTRO	2.2UF	50WV		
C75 -78			CK45FB1H471K	CERAMIC	470PF	K		
C79 ,80			CC45FSL1H390J	CERAMIC	39PF	J	ETX	
C81 ,82			CE04LW1C470M	ELECTRO	47UF	16WV		
C83			CE04LW1C101M	ELECTRO	100UF	16WV		
C84 ,85			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C86			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C87			CC45FSL1H221J	CERAMIC	220PF	J		
C88			CQ92FM1H103J	MYLAR	0.010UF	J		
C91 ,92			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C101,102			CK45FB1H222K	CERAMIC	2200PF	K		
C103,104			CE04LW1J220M	ELECTRO	22UF	63WV		
C105,106			CK45FB1H222K	CERAMIC	2200PF	K		
C107-110			CQ92FM1H104J	MYLAR	0.10UF	J	ETX	
C107,108			CQ92FM1H473J	MYLAR	0.047UF	J	KPMYI	
C203,204			CC45FSL1H221J	CERAMIC	220PF	J		
C209			CE04LW1V100M	ELECTRO	10UF	35WV		
C210			CE04LW1H2R2M	ELECTRO	2.2UF	50WV		
C211			CE04LW1H010M	ELECTRO	1.0UF	50WV		
C211		*	C90-3529-05	ELECTRO	1UF	35WV		
C231,232			CC45FSL1H101J	CERAMIC	100PF	J		
C233,234			CK45FB1H561K	CERAMIC	560PF	K		
C235,236			CE04LW1A470M	ELECTRO	47UF	10WV		
C237-240			CK45FB1H391K	CERAMIC	390PF	K		
C241,242			CQ92FM1H103J	MYLAR	0.010UF	J		
C243,244			CE04LW1V100M	ELECTRO	10UF	35WV		
C243,244		*	C90-3530-05	ELECTRO	10UF	35WV		
C245,246			CQ92FM1H623J	MYLAR	0.062UF	J		
C247			CE04LW1A101M	ELECTRO	100UF	10WV		
C248			CE04LW1C470M	ELECTRO	47UF	16WV		
C249,250			CK45FB1H332K	CERAMIC	3300PF	K		

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No.9

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C251,252			CE04LW1V4R7M	ELECTRO	4.7UF	35WV		
C251,252		*	C90-3533-05	ELECTRO	4.7UF	35WV		
C253,254			C90-3249-05	ELECTRO	0.22UF	50WV		
C255,256			C90-3225-05	ELECTRO	10UF	16WV		
C257			C90-3230-05	ELECTRO	100UF	16WV		
C258			C90-3253-05	ELECTRO	1UF	50WV		
C259			C90-3226-05	ELECTRO	22UF	16WV		
C260,261			C90-3231-05	ELECTRO	3.3UF	25WV		
C262,263			CE04LW1V4R7M	ELECTRO	4.7UF	35WV		
C262,263		*	C90-3533-05	ELECTRO	4.7UF	35WV		
C264,265			CE04LW1HR22M	ELECTRO	0.22UF	50WV		
C266,267			CE04LW1A101M	ELECTRO	100UF	10WV		
C266,267		*	C90-3532-05	ELECTRO	100UF	10WV		
C268,269			CE04LW1V100M	ELECTRO	10UF	35WV		
C268,269		*	C90-3530-05	ELECTRO	10UF	35WV		
C270			CE04LW1C331M	ELECTRO	330UF	16WV		
C271			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C273			CE04LW1H010M	ELECTRO	1.0UF	50WV		
C273		*	C90-3529-05	ELECTRO	1UF	35WV		
C274			CQ92FM1H682J	MYLAR	6800PF	J		
C275			CQ92FM1H822J	MYLAR	8200PF	J		
C276			CQ92FM1H682J	MYLAR	6800PF	J		
C277			CE04LW1V100M	ELECTRO	10UF	35WV		
C278,279			CC45FSL1H221J	CERAMIC	220PF	J		
C280			CQ93HP2A822J	MYLAR	8200PF	J		
C281,282			CK45FB1H391K	CERAMIC	390PF	K		
C283			CE04LW1C470M	ELECTRO	47UF	16WV		
C284			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C285			CK45FB2H471K	CERAMIC	470PF	K		
C286,287			CC45FSL1H221J	CERAMIC	220PF	J		
C288			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C289,290			CQ92FM1H132J	MYLAR	1300PF	J		
C291,292			CE04LW1H2R2M	ELECTRO	2.2UF	50WV		
C293,294			CE04LW1A101M	ELECTRO	100UF	10WV		
C293,294		*	C90-3532-05	ELECTRO	100UF	10WV		
C295,296			CE04LW1V100M	ELECTRO	10UF	35WV		
C295,296		*	C90-3530-05	ELECTRO	10UF	35WV		
C297			CE04LW1C101M	ELECTRO	100UF	16WV		
C299,300			CE04LW1V100M	ELECTRO	10UF	35WV		
C299,300		*	C90-3530-05	ELECTRO	10UF	35WV		
C301,302			CE04LW1V4R7M	ELECTRO	4.7UF	35WV		
C301,302		*	C90-3533-05	ELECTRO	4.7UF	35WV		
C316			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C317			CE04LW1A101M	ELECTRO	100UF	10WV		
C318			CE04LW1H010M	ELECTRO	1.0UF	50WV		
C318		*	C90-3529-05	ELECTRO	1UF	35WV		
C320			CE04LW1V100M	ELECTRO	10UF	35WV		
C321			CE04LW1V4R7M	ELECTRO	4.7UF	35WV		
C321		*	C90-3533-05	ELECTRO	4.7UF	35WV		
C322,323			CK45FB1H682K	CERAMIC	6800PF	K		
CN2	3G		E40-4163-05	FLAT CABLE CONNCTOR				
J1			E13-0446-05	PHONO JACK(4P) PHONO,AUX				
J2			E08-1508-05	RECTANGULAR RECEPTACLE RED(GE)				
J3			E08-1510-05	RECTANGULAR RECEPTACLE WHI(CD)				
J4		*	E70-0042-05	LOCK TERMINAL BOARD SPEAKERS				

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⚠ indicates safety critical components.

* New Parts
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Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

No.10

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
J5			E11-0209-05	PHONE JACK PHONES		
665	2F		F20-1297-05	INSULATING SHEET		
F1 ,2			F04-5022-05	FUSE (UL) (125V 5A UL)	KP	
F1 ,2			F05-4025-05	FUSE (SEMKO) (250V T4A)	ETXMYI	
F3			F04-2025-05	FUSE (UL) (250V 2A)	KP	
F3			F05-1623-05	FUSE (SEMKO) (250V T1.6A)	ETXMYI	
F4 ,5			F05-2525-05	FUSE (SEMKO) (250V T2.5A)	ETXMYI	
F4 ,5			F06-2525-05	FUSE (UL) (250V 2.5A)	KP	
CN11-20			J13-0075-05	FUSE CLIP		
J7 ,8			J11-0098-05	WIRE CLAMPER		
L1 ,2			L39-0085-05	PHASE COMPENSATION COIL	ETX	
L201,202			L79-1201-05	LC FILTER		
L203,204			L40-1035-20	SMALL FIXED INDUCTOR(10MH,J)		
L205			L32-0555-15	BIAS OSCILATING COIL		
L206,207			L40-1035-20	SMALL FIXED INDUCTOR(10MH,J)		
X11			L78-0267-05	RESONATOR (4.194MHZ)		
A	2F		N09-0333-05	TAPPING SCREW (3X12)		
E	2G		N89-3008-46	BINDING HEAD TAPTITE SCREW		
CP1			R90-0809-05	MULTI-COMP 10KX4 J 1/6W		
R30 -33			RS14KB3D151J	FL-PROOF RS 150 J 2W		
R45 ,46			RD14NB2E121J	RD 120 J 1/4W		
R55			RD14NB2E101J	RD 100 J 1/4W		
R60			RS14KB3D101J	FL-PROOF RS 100 J 2W		
R80			RD14NB2E100J	RD 10 J 1/4W		
R115-118			RD14NB2E100J	RD 10 J 1/4W		
R119-122			RS14KB3DR22J	FL-PROOF RS 0.22 J 2W		
R127,128			RS14KB3A4R7J	FL-PROOF RS 4.7 J 1W		
R141-144			RD14NB2E102J	RD 1.0K J 1/4W		
R224			RD14NB2E100J	RD 10 J 1/4W		
R250			RD14NB2E391J	RD 390 J 1/4W		
R257			RD14NB2E221J	RD 220 J 1/4W		
R276			RD14NB2E101J	RD 100 J 1/4W		
R315			RD14NB2E100J	RD 10 J 1/4W		
R324,325			RD14NB2E4R7J	RD 4.7 J 1/4W		
R328			RD14NB2E471J	RD 470 J 1/4W		
R446			RD14NB2E221J	RD 220 J 1/4W		
VR11,12		*	R12-1072-05	TRIM POT.(3.3K) A:PLAY LEVEL		
VR13,14			R12-1073-05	TRIM POT.(4.7K) B:PLAY LEVEL		
VR15,16			R12-3100-05	TRIM POT.(10K) REC LEVEL		
VR17,18			R12-3103-05	TRIM POT.(47K) BIAS LEVEL		
VR19			R12-1070-05	TRIM POT.(1K) A:NOR SPEED		
VR20			R12-1071-05	TRIM POT.(2.2K) A:HI SPEED		
VR21			R12-1070-05	TRIM POT.(1K) B:NOR SPEED		
VR22			R12-1071-05	TRIM POT.(2.2K) B:HI SPEED		
K1 ,2			S51-2094-05	MAGNETIC RELAY		
S111			S31-2132-05	SLIDE SWITCH BEAT CANCEL		
D1 ,2			HSS104	DIODE		
D1 ,2			1SS133	DIODE		
D5 ,6			HSS104	DIODE		
D5 ,6			1SS133	DIODE		
D7 ,8			HSS104A	DIODE		

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No.11

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
D7 ,8			1SS131	DIODE		
D9			D3SBA20F03	DIODE		
D10			S5688B	DIODE		
D11			KBP02ML-6127	DIODE		
D12 -14			HZS13N(B2)	ZENER DIODE		
D12 -14			RD13ES(B2)	ZENER DIODE		
D15 -23			HSS104	DIODE		
D15 -23			1SS133	DIODE		
D24			HZS5.1S(B2)	ZENER DIODE		
D24			RD5.1JS(B2)	ZENER DIODE		
D25			HSS104	DIODE		
D25			1SS133	DIODE		
D26 ,27			HZS8.2N(B2)	ZENER DIODE		
D26 ,27			RD8.2ES(B2)	ZENER DIODE		
D28			HSS104	DIODE		
D28			1SS133	DIODE		
D29			S5688B	DIODE		
D30			HZS6.8N(B2)	ZENER DIODE		
D30			RD6.8ES(B2)	ZENER DIODE		
D31 ,32			HSS104	DIODE		
D31 ,32			1SS133	DIODE		
D33			HSS104A	DIODE		
D33			1SS131	DIODE		
D204			HZS5.1S(B2)	ZENER DIODE		
D204			RD5.1JS(B2)	ZENER DIODE		
D205			HSS104	DIODE		
D205			1SS133	DIODE		
D206			HZS8.2N(B2)	ZENER DIODE		
D206			RD8.2ES(B2)	ZENER DIODE		
D207			HSS104	DIODE		
D207			1SS133	DIODE		
D220			HSS104	DIODE		
D220			1SS133	DIODE		
D221,222			HSS104A	DIODE		
D221,222			1SS131	DIODE		
D223-227			HSS104	DIODE		
D223-227			1SS133	DIODE		
D228,229			HSS104A	DIODE		
D228,229			1SS131	DIODE		
D230-240			HSS104	DIODE		
D230-240			1SS133	DIODE		
IC1			NJM4565D-D	IC(OP AMP X2)		
IC2			XRU40528	IC(MULTIPLEXER/DEMULTIPLEXER)		
IC3			NJM4565D	IC(OP AMP X2)		
IC4			HD14066BP	IC(QUADRAPLE ANALOG SWITCH)		
IC5			TA78057S	IC(VOLTAGE REGULATOR/+5.75V)		
IC12,13			HD14066BP	IC(QUADRAPLE ANALOG SWITCH)		
IC14			LA3246	IC(PREAMP X2)		
IC15			HA12136A	IC(DOLBY B NR SYSTEM)		
IC16			CXA1198AP	IC(CASSETTE DECK REC EQUALIZER		
IC17			UPC1330HA	IC(2CH HEAD SWITCHING)		
IC20		*	UPD75112GF-E43	IC		
IC21			XRU4051B	IC(MULTIPLEXER/DEMULTIPLEXER)		
Q1 ,2			DTA124ES	DIGITAL TRANSISTOR		
Q1 ,2			RN2203	DIGITAL TRANSISTOR		

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No.12

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
Q3			2SA1175(F,E)	TRANSISTOR		
Q3			2SA933S(Q,R)	TRANSISTOR		
Q4			2SD2012	TRANSISTOR		
Q5			2SC3246(H,J)	TRANSISTOR		
Q6			2SA1175(F,E)	TRANSISTOR		
Q6			2SA933S(Q,R)	TRANSISTOR		
Q7 ,8			2SC1740S(Q,R)	TRANSISTOR		
Q7 ,8			2SC2785(F,E)	TRANSISTOR		
Q9			2SA1175(F,E)	TRANSISTOR		
Q9			2SA933S(Q,R)	TRANSISTOR		
Q11 ,12			2SD1302(S,T)	TRANSISTOR		
Q13 -16			2SC1740S(Q,R)	TRANSISTOR		
Q13 -16			2SC2785(F,E)	TRANSISTOR		
Q17 ,18			2SA992(F,E)	TRANSISTOR		
Q19			2SA954(L,K)	TRANSISTOR		
Q20 ,21			2SA1175(F,E)	TRANSISTOR		
Q20 ,21			2SA933S(Q,R)	TRANSISTOR		
Q22			2SD2012	TRANSISTOR		
Q23 ,24			2SC1740S(Q,R)	TRANSISTOR		
Q23 ,24			2SC2785(F,E)	TRANSISTOR		
Q31 ,32			2SC4137(V,W)	TRANSISTOR		
Q33 ,34			2SD2340	TRANSISTOR		
Q35 ,36			2SB1531	TRANSISTOR		
Q37 -39			2SC1740S(Q,R)	TRANSISTOR		
Q37 -39			2SC2785(F,E)	TRANSISTOR		
Q40			2SD2012	TRANSISTOR		
Q201-208			2SC1740S(Q,R)	TRANSISTOR		
Q201-208			2SC2785(F,E)	TRANSISTOR		
Q209-212			DTC143TS	DIGITAL TRANSISTOR		
Q209-212			RN1210	DIGITAL TRANSISTOR		
Q213,214			DTC124ES	DIGITAL TRANSISTOR		
Q213,214			RN1203	DIGITAL TRANSISTOR		
Q215,216			DTC143TS	DIGITAL TRANSISTOR		
Q215,216			RN1210	DIGITAL TRANSISTOR		
Q217			2SC1740S(Q,R)	TRANSISTOR		
Q217			2SC2785(F,E)	TRANSISTOR		
Q218,219			2SD1302(S,T)	TRANSISTOR		
Q220			DTA124ES	DIGITAL TRANSISTOR		
Q220			RN2203	DIGITAL TRANSISTOR		
Q229-231			DTC124ES	DIGITAL TRANSISTOR		
Q229-231			RN1203	DIGITAL TRANSISTOR		
Q232			DTA124ES	DIGITAL TRANSISTOR		
Q232			RN2203	DIGITAL TRANSISTOR		
Q234-236			2SC2003(L,K)	TRANSISTOR		
Q237,238			2SC1845(F,E)	TRANSISTOR		
Q239			2SA992(F,E)	TRANSISTOR		
Q240-243			2SA1175(F,E)	TRANSISTOR		
Q240-243			2SA933S(Q,R)	TRANSISTOR		
Q246			2SA1175(F,E)	TRANSISTOR		
Q246			2SA933S(Q,R)	TRANSISTOR		
Q247			DTC124ES	DIGITAL TRANSISTOR		
Q247			RN1203	DIGITAL TRANSISTOR		
Q248,249			2SC3246(H,J)	TRANSISTOR		
Q250			2SC1740S(Q,R)	TRANSISTOR		
Q250			2SC2785(F,E)	TRANSISTOR		

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No.13

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
Q251			2SA1175(F,E)	TRANSISTOR		
Q251			2SA933S(Q,R)	TRANSISTOR		
Q252			DTC124ES	DIGITAL TRANSISTOR		
Q252			RN1203	DIGITAL TRANSISTOR		
Q253,254			2SC3246(H,J)	TRANSISTOR		
Q255			2SC1740S(Q,R)	TRANSISTOR		
Q255			2SC2785(F,E)	TRANSISTOR		
MECHANISM ASSY (D40-132X-XX)						
301	2A		A10-2922-08	HEAD CHASSIS CALKED ASSY		
302	1B		A11-0729-08	BASE CHASSIS ASSY		
305	1C		D01-0138-08	FLYWHEEL ASSY LEFT		
306	2C		D01-0139-08	FLYWHEEL ASSY RIGHT	ET	B
306	2C	*	D01-0163-08	FLYWHEEL ASSY RIGHT		
308	2B		D10-3210-08	SHHIFT LEVER		
309	2A		D10-3211-08	PLAT SHIFT LEVER		
310	2A		D10-3212-08	INTER LOCK LEVER		B
310	2A		D10-3220-08	INTER LOCK LEVER		A
311	2B		D10-3241-08	EJECT LEVER		B
311	1A		D10-3242-08	EJECT LEVER		A
312	1B		D10-3214-08	FR ARM		
313	1A		D10-3215-08	PLAY ARM		
314	1C		D10-3216-08	SHIFT SELECT LEVER		
315	2B		D10-3217-08	TRIGGER ARM		
316	2B		D10-3218-08	SELECT ARM		
317	1C		D10-3219-08	BRAKE ARM		
319	1B		D13-0965-08	CLUTCH GEAR		
320	1B		D13-0966-08	REW GEAR		
321	1B		D13-0967-08	FR GEAR		
322	1B,2B		D13-0968-08	REEL GEAR		
323	1A		D13-0974-08	PLAY GEAR ASSY		
324	2C		D13-0970-08	PLAY CAM GEAR		
325	2A		D13-0981-08	ROTATION GEAR		
326	2A		D13-0982-08	RETURN GEAR		
329	2B		D19-0270-18	REEL CAP		
330	1C		D19-0273-08	CLUTCH PULLEY ASSY		
332	2B		D23-0284-08	HOUSING ASSY RIGHT		
333	1A		D23-0270-08	HOUSING ASSY LEFT		
335	1C		E35-0264-08	MOTOR WIRE		
336	1C		E31-7951-08	FLAT WIRE 14P		B
336	1C	*	E35-0793-08	FLAT WIRE 14P		A
337	1B		E35-0359-08	HEAD WIRE 8P		B
337	1B	*	E35-0788-08	HEAD WIRE 3P		A
338	1C	*	J19-3652-08	CABLE HOLDER		
340	2A		G01-3426-08	RETURN GEAR SPRING		
341	1B,2B		G01-3429-08	REEL SPRING		
342	1C		G01-3431-08	CLUTCH ARM SPRING		
343	1A		G01-3432-08	PLAY ARM SPRING		
344	1C		G01-3433-08	SHIFT SELECT LEVER SPRING		
345	2C		G01-3434-08	TRIGGER ARM SPRING		
346	2B		G01-3435-08	SHIFT LEVER SPRING		
347	2A		G01-3436-08	HEAD CHASSIS SPRING		
348	2B		G01-3437-08	PINCH ROLLER ARM SPRING RIGHT		
349	1A		G01-3438-08	PINCH ROLLER ARM SPRING LEFT		
350	1C		G01-3439-08	BRAKE ARM SPRING		

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A : A DECK
B : B DECK

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No.14

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
351	2A		G01-3440-08	INTER LOCK LEVER SPRING RIGHT		B
351	2A		G01-3441-08	INTER LOCK LEVER SPRING LEFT		A
353	1B		G02-0913-08	PACK LOCK FLAT SPRING		
354	2A		G02-0994-08	AZIMUTH SPRING		
355	2A		G11-2117-08	HEAD WIRE CLAMPER		
356	1B		G16-0780-08	REFLECT SEAL		
357	2B		G16-0786-08	INSULATING SHEET		
358	2A		J21-5918-08	HEAD PLATE ASSY		
359	2A		J31-0850-08	RETURN GEAR COLLAR		
360	1A,2B		J31-0851-08	EJECT LEVER COLLAR		
361	2B		J42-0183-08	REEL CAP BUSHING		
363	2A		J90-0679-08	TAPE GUIDE		
364	2A		J90-0680-08	CASSETTE GUIDE		
365	1A,2B		N09-2870-08	SCREW M2.6X5		
366	2A,1C		N09-2871-08	SCREW M2X6		
367	2A	*	N09-3048-08	SCREW M1.7X8		
368	2A		N09-2953-08	SCREW M2X10		
369	2A		N09-2876-08	HEAD SCREW		
370	2A,2B		N09-2877-08	TAPTITE SCREW M2X4		
371	2A		N09-2951-08	AZIMUTH SCREW		
372	1B		N19-1224-08	FLAT WASHER /4.1X6.5X0.25		
373	1C		N19-1225-08	FLAT WASHER /2.1X4.0X0.25		
374	1B,1C		N19-1285-08	FLAT WASHER /1.6X3.0X0.13		
375	2C		N19-1286-08	FLAT WASHER /2.3X4.0X0.25		
376	2A		N19-1287-08	FLAT WASHER /3.5X6.5X0.5		
377	1A		N19-1288-08	FLAT WASHER /1.65X5.0X0.5		
378	2B		N19-1316-08	FLAT WASHER /1.8X6.0X0.5		
379	1A		N19-1355-08	FLAT WASHER /1.9X5.0X0.5		
380	2B		N19-1354-08	FLAT WASHER /2.19X5.5X0.5		
381	1B		N35-2604-46	BINDING HEAD MACHINE SCREW		
385	1C	*	S74-0028-08	LEAF SWITCH		
386	1C		S74-0007-08	LEAF SWITCH		
388	2B		T94-0228-08	SOLENOID		
390	1C	*	W02-1182-08	ELECTRIC UNIT		
BM	1C		D16-0332-08	MAIN BELT		
BR	1C		D16-0331-08	REEL BELT		
PF	2B		D14-0341-08	PINCH ROLLER ASSY		
PR	2A		D14-0340-08	PINCH ROLLER ASSY		
MM	1B		T42-0599-08	DC MOTOR		
PH	2A		T31-0066-08	PLAYBACK HEAD		A
RPEH	2A		T39-0020-08	REC,PLAYBACK,ERASE HEAD		B
PH1	1C		NJL5165K	PHOTO REFLECTOR		

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⚠ indicates safety critical components.

RX-28

SPECIFICATIONS

(For U.K. and Europe)

Receiver unit

[Amplifier section]
Rated power output
(IEC / NF) From 63 Hz to 12,500 Hz, 0.7% T.H.D.
at 8 Ω ..... 30 W + 30 W
(DIN) 1 kHz at 8 Ω ..... 30 W + 30 W
Total harmonic distortion
..... 0.09% (40 Hz ~ 20 kHz, 1/2 Rated power, 8 Ω)
..... 0.06% (1 kHz, 1/2 Rated power, 8 Ω)
Frequency response
AUX ..... 20 Hz ~ 40 kHz, + 0 dB, –3 dB
Signal to noise ratio
PHONO (MM) ..... 95 dB(IHF'66) / 80 dB(IHF'78)
AUX ..... 105 dB(IHF'66) / 90 dB(IHF'78)
PHONO (MM) ..... 95 dB(DIN 500 mW output)
AUX ..... 105 dB(DIN 500 mW output)
Input sensitivity / Impedance
PHONO (MM) ..... 2.5 mV / 47 kΩ
AUX ..... 200 mV / 47 kΩ

[Tuner section]
FM section
Tuning frequency range ..... 87.5 MHz ~ 108 MHz
Antenna impedance ..... 75 Ω unbalanced
Sensitivity (DIN at 75 Ω)
MONO ..... 0.8 μV / 10.8 dBf
STEREO ..... 25 μV / 38.8 dBf
Total harmonic distortion (DIN at 1 kHz, 65.2 dBf input)
MONO 0.3%
STEREO 0.5%
Signal to noise ratio
(DIN weighted at 1 kHz, 65.2 dBf input)
MONO ..... 70 dB
STEREO ..... 64 dB
Selectivity (DIN ±300 kHz) ..... 64 dB
Stereo separation (DIN at 1 kHz) ..... 40 dB
Frequency response ..... 30 Hz ~ 15 kHz
+0.5 dB, –2.5 dB

MW section
Tuning frequency range ..... 531 kHz ~ 1,602 kHz
Usable sensitivity ..... 14 μV / (500 μV/m)
Total harmonic distortion 0.5%
Signal to noise ratio ..... 49 dB

LW section
Tuning frequency range ..... 153 kHz ~ 281 kHz
Usable sensitivity ..... 20 μV
Total harmonic distortion 0.6%
Signal to noise ratio ..... 47 dB

[Cassette section]
Type ..... 4-track, 2-channel stereo

Heads
Playback / Record head ..... 1 (B deck)
Playback head ..... 1 (A deck)
Erasing head ..... 1 (B deck)
Motors ..... 1 (each deck)
Fast winding time ..... Approx. 110 seconds
with C-60 tape

Frequency response (B deck)
Normal tape ..... 30 Hz to 16,000 Hz ±3 dB
CrO_2 tape ..... 30 Hz to 17,000 Hz ±3 dB

Signal to noise ratio
Dolby NR ON ..... 64 dB (Normal tape)
Dolby NR OFF ..... 54 dB (Normal tape)

Wow and flutter ..... 0.08% (W.R.M.S.)

[General]
Power consumption ..... 130 W
Dimensions ..... W: 360 mm (14-3/16")
H : 319 mm (12-9/16")
D : 309 mm (12-3/16")

Weight (net) ..... 7.0 kg (15.4 lb)

Note:
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

SPECIFICATIONS

(For U.S.A. and Canada)

Receiver unit

[Amplifier section]
Rated power output

28 watts per channel minimum RMS, both channels driven, at 8 Ω from 40 Hz to 20,000 Hz with no more than 0.09% total harmonic distortion

Total harmonic distortion
.....0.09% (40 Hz ~ 20 kHz, 1/2 Rated power, 8 Ω)
.....0.06% (1 kHz, 1/2 Rated power, 8 Ω)
Frequency response
AUX .....20 Hz ~ 40 kHz, + 0 dB, –3 dB
Signal to noise ratio
PHONO (MM) .....95 dB(IHF'66) / 80 dB(IHF'78)
AUX .....105 dB(IHF'66) / 90 dB(IHF'78)
Input sensitivity / Impedance
PHONO (MM) .....2.5 mV / 47 kΩ
AUX .....200 mV / 47 kΩ

[Tuner section]
FM section
Tuning frequency range .....87.5 MHz ~ 108 MHz
Antenna impedance .....75 Ω unbalanced
Sensitivity (MONO at 75 Ω)
MONO .....0.8 μV / 10.8 dBf
50 dB quieting sensitivity (at 75 Ω)
MONO .....1.8 μV / 16.2 dBf
STEREO .....24 μV / 38.8 dBf
Total harmonic distortion (at 1 kHz, 65 dBf input)
MONO 0.3%
STEREO 0.5%
Signal to noise ratio (at 1 kHz, 65 dBf input)
MONO .....70 dB
STEREO .....64 dB
Selectivity (±400 kHz) .....64 dB
Stereo separation (at 1 kHz) .....40 dB
Frequency response .....30 Hz ~ 15 kHz
+0.5 dB, –2.5 dB

AM section
Tuning frequency range .....530 kHz ~ 1,700 kHz
Usable sensitivity .....14 μV / (500 μV/m)
Total harmonic distortion 0.5%
Signal to noise ratio .....49 dB

[Cassette section]
Type .....4-track, 2-channel stereo

Heads
Playback / Record head .....1 (B deck)
Playback head .....1 (A deck)
Erasing head .....1 (B deck)
Motors .....1 (each deck)
Fast winding time .....Approx. 110 seconds with C-60 tape

Frequency response (B deck)
Normal tape .....30 Hz to 16,000 Hz ±3 dB
CrO_2 tape .....30 Hz to 17,000 Hz ±3 dB

Signal to noise ratio
Dolby NR ON .....64 dB (Normal tape)
Dolby NR OFF .....54 dB (Normal tape)

Wow and flutter .....0.08% (W.R.M.S.)

[General]
Power consumption .....130 W
Dimensions .....W: 360 mm (14-3/16")
H : 319 mm (12-9/16")
D : 309 mm (12-3/16")

Weight (net) .....7.0 kg (15.4 lb)

Note:
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

RX-28

SPECIFICATIONS

(For other countries)

Receiver unit

[Amplifier section]
Rated power output
(EIAJ 8 Ω) ..... 35 W + 35 W
(IHF'66) From 40 Hz to 20 kHz, 0.09% T.H.D.
at 8 Ω ..... 30 W + 30 W
(IEC / NF) From 63 Hz to 12,500 Hz, 0.7 % T.H.D.
at 8 Ω ..... 30 W + 30 W
Total harmonic distortion
.....0.09% (40 Hz ~ 20 kHz, 1/2 Rated power, 8 Ω)
.....0.06% (1 kHz, 1/2 Rated power, 8 Ω)
Frequency response
AUX .....20Hz ~ 40 kHz, + 0 dB, –3 dB
Signal to noise ratio
PHONO (MM) .....95 dB(IHF'66) / 80 dB(IHF'78)
AUX.....105 dB(IHF'66) / 90 dB(IHF'78)
Input sensitivity / Impedance
PHONO (MM) .....2.5 mV / 47 kΩ
AUX .....200 mV / 47 kΩ

[Tuner section]
FM section
Tuning frequency range .....87.5 MHz ~ 108 MHz
Antenna impedance .....75 Ω unbalanced
Sensitivity (MONO at 75 Ω)
MONO .....0.8 μV / 10.8 dBf
50 dB quieting sensitivity (at 75 Ω)
MONO .....1.8 μV / 16.2 dBf
STEREO.....24 μV / 38.8 dBf
Total harmonic distortion (at 1 kHz, 65 dBf input)
MONO.....0.3%
STEREO 0.5%
Signal to noise ration (at 1 kHz, 65 dBf input)
MONO .....70 dB
STEREO .....64 dB
Selectivity (±400 kHz).....64 dB
Stereo separation (at 1 kHz) .....40 dB
Frequency response.....30 Hz ~ 15 kHz
+0.5 dB, –2.5 dB

Note:
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

AM section
Tuning frequency range
9 kHz step.....531 kHz ~ 1,602 kHz
10 kHz step.....530 kHz ~ 1,610 kHz
Usable sensitivity .....14 μV / (500 μV/m)
Total harmonic distortion.....0.5%
Signal to noise ratio.....49 dB

[Cassette section]
Type .....4-track, 2-channel stereo

Heads
Playback / Record head .....1 (B deck)
Playback head.....1 (A deck)
Erasing head .....1 (B deck)
Motors .....1 (each deck)
Fast winding time.....Approx. 110 seconds
with C-60 tape

Frequency response (B deck)
Normal tape .....30 Hz to 16,000 Hz ±3 dB
CrO_2 tape .....30 Hz to 17,000 Hz ±3 dB

Signal to noise ratio
Dolby NR ON.....64 dB (Normal tape)
Dolby NR OFF .....54 dB (Normal tape)

Wow and flutter .....0.08% (W.R.M.S.)

[General]
Power consumption .....130 W
Dimensions .....W: 310 mm (14-3/16")
H : 319 mm (12-9/16")
D : 319 mm (12-3/16")

Weight (net) .....7.0 kg (15.4 lb)

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